

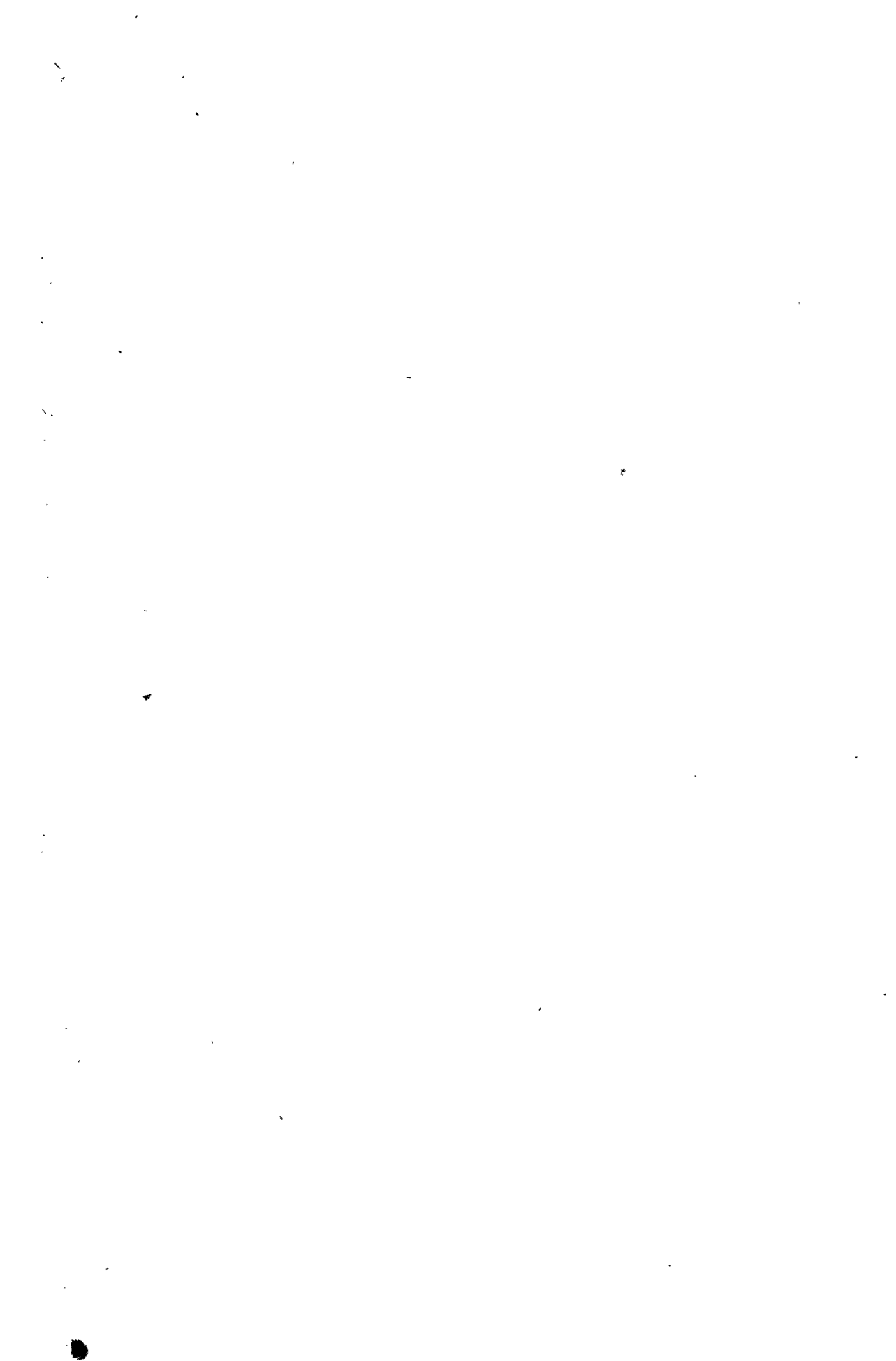
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THE JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF

1602

GREAT BRITAIN AND IRELAND.



VOL. LII.

572.05
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PUBLISHED BY THE

Royal Anthropological Institute of Great Britain and Ireland,

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NOTICE.

For convenience of reference, all volumes of the new (imperial octavo) series which began in 1898 are numbered in continuation of the old demy octavo series, Vols. I-XXVII. Thus Vol. I of the imperial octavo series = Vol. XXVIII of the old series; and the present Vol. LII corresponds to N.S. Vol. XXV.

The Index to the present volume includes an index to the Institute's monthly publication MAN for the year of issue 1922.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING,
TUESDAY, JANUARY 24TH, 1922, AT THE ROOMS OF THE INSTITUTE,
50, GREAT RUSSELL STREET, W.C.

Dr. W. H. R. RIVERS, President, in the Chair.

The Minutes of the last Annual General Meeting were read and accepted.

The PRESIDENT appointed Mr. GARFITT and Col. HODSON as Scrutineers and declared the ballot open, after stating that as, owing to a technicality, Prof. NEWBERRY was ineligible for election, and that Mr. TORDAY had withdrawn, Dr. R. J. GLADSTONE and Prof. ELLIOT SMITH had been nominated to the vacancies.

The HON. SECRETARY read the Report of the Council for 1921, which was accepted.

The HON. TREASURER read the Financial Report for 1921, and this was also accepted.

The PRESIDENT then read his address, "The Unity of Anthropology."

The SCRUTINEERS delivered their Report, and the following were declared duly elected as Officers and Council for 1922-23.

President.—W. H. R. Rivers, M.A., M.D., F.R.S.

Vice-Presidents.

Sir J. G. Frazer, D.C.L., LL.D., Litt.D., F.R.S.	Prof. J. L. Myres, M.A., F.S.A., F.R.G.S. Prof. F. G. Parsons, F.R.C.S.
---	--

Hon. Secretary.—E. N. Fallaize, B.A.

Hon. Treasurer.—F. C. Shruballs, M.A., M.D.

Hon. Editor.—H. S. Harrison, D.Sc.

Council.

H. G. Beasley. C. O. Blagden, M.A. H. J. Braunholtz, M.A. M. C. Burkitt, M.A. L. C. G. Clarke. Miss M. E. Durham. Prof. H. J. Fleure, D.Sc. R. J. Gladstone, M.D. W. L. Hildburgh, M.A., Ph.D., F.S.A. Capt. T. A. Joyce, M.A., O.B.E. Capt. E. W. Martindell, M.A.	Miss M. A. Murray. H. J. E. Peake. Prof. W. Flinders Petrie, D.C.L., LL.D., F.R.S., F.B.A. S. H. Ray, M.A. Charles Singer, M.D., F.R.C.P. Prof. G. Elliot Smith, M.A., Litt.D., M.D., F.R.S. H. S. Stannus, M.D. S. Hazzledine Warren, F.G.S. R. W. Williamson, M.Sc.
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A hearty vote of thanks to the President for his address was proposed by Mr. WILLIAMSON, who asked in the name of the Institute that the President would allow it to be published in the *Journal* of the Institute. This was seconded by Mr. H. J. E. PEAKE and carried by acclamation. The Institute then adjourned.

REPORT OF THE COUNCIL FOR THE YEAR 1921.

DURING the year 1921, interest in the science of anthropology among the general public has continued to grow, as is indicated by the marked increase in the numbers of those who have been elected Fellows during the year. The activities of the Institute have been extended in the course of the year, the *Journal* has been increased in size, and the Council has under consideration several proposals by which it is hoped to advance the study of anthropology and render the Institute of greater service to its Fellows. The situation, however, is not without difficulty: the Treasurer's statement shows that the income has been exceeded by the expenditure. Unless the financial situation shows some improvement, the Council will have to consider the question of possible economies. It would, therefore, urge upon Fellows the necessity for endeavouring to increase the income by inducing those who are interested in anthropology to join the Institute.

It was with some reluctance that the Council decided to impose an entrance fee of £1 1s. The question of increasing the annual subscription was also considered; but it was felt that any increase might be more harmful than beneficial, by checking the accession of new members, and it was decided to take no action.

As will be seen from the following table, there has been a net increase of 33 subscribing Fellows during the year.

—			Total Jan. 1st, 1921.	Loss by death or resignation.	Since elected.	Total Jan. 1st, 1922.
Honorary Fellows	...	...	37	3	2	36
Local Correspondents	...	...	20			18
<i>Deduct Ordinary Fellows</i>	...	...	2			3
Affiliated Societies	...	...	— 18 3	3 —	1 1	— 15 4
Ordinary Fellows:—						
Compounding	...	...	61	9	3	55
Subscribing	...	...	417	32	65	450
Total Membership	...	...	536			560

Losses by death during the year are as follows: Miss M. A. Czaplicka (elected 1914; 60, 1921¹), R. E. Dennett (elected 1904), Lady Tylor (elected 1891), W. W. Stubbs (elected 1908), Dr. W. H. Strachan (elected 1911), Miss Margaret Lyle (elected 1917), Professor H. Jackson (elected 1863), Oscar Montelius (elected 1897; 12, 1922¹), W. Morrison (elected 1870), Professor V. Giuffrida Ruggeri (elected 1917; 28, 1922¹), Dr. Emile Cartailhac (elected 1876; 27, 1922¹).

The Council would wish also to express its deep regret at the death, on January 8th, 1922, of Mr. M. Longworth-Dames. Mr. Dames' many and valuable

¹ Obituary notice appeared in *Man*.

services to the Institute and to anthropology are too well known to need recapitulation here.

Nineteen Meetings (ten ordinary, nine special) have been held, as against twelve in 1920. Of the nineteen communications submitted, nine dealt with ethnological subjects, five with archæological, three with physical anthropology, and one with folklore.

The Huxley Lecture was delivered by Mr. Henry Balfour at a Meeting held in the rooms of the Royal Society, Burlington House. Several of the Ordinary and Special Meetings were also held in the rooms of the Royal Society.

During the year, two half-yearly parts of the *Journal* have been published, vol. I, Part 2, and vol. II, Part 1. Of both, 106 copies have been sold. Of the preceding issues at the corresponding period of 1920, 115 and 97 copies were sold.

Subscriptions to, and sales of, *Man* during 1921 were £143 18s. and £66 1s., respectively, as against £106 15s. 10d. and £56 10s. 4d. in 1920, the price of *Man*, however, being doubled in 1921. From these figures it would appear that, while the sales of the *Journal* have been stationary, the increase in prices has affected adversely the sale of *Man*.

The accessions to the Library number 231, of which 104 are bound volumes.

The Exchange List has been increased by thirteen publications—one English, one Indian, and eleven foreign.

CONJOINT BOARD OF SCIENTIFIC SOCIETIES.

Dr. C. G. Seligman and Dr. C. S. Myers have acted as representatives of the Institute on this Board. £5 was contributed toward the funds in 1921.

HONOURS CONFERRED ON FELLOWS OF THE INSTITUTE.

His Majesty the King has been pleased to confer the honour of knighthood upon Professor Sir Arthur Keith.

RESEARCH COMMITTEES.

The activities of the Research Committees have continued throughout the year. A further report of the Graig Lwyd Excavation Committee has appeared in the *Journal*, and exhibitions of the finds were held in the rooms of the Institute from April 20th–23rd, and at the rooms of the Society of Antiquaries from May 23rd–25th. A committee has been appointed to carry on the exploration of caves in north Derbyshire and adjacent areas, and a Special Standing Research Committee has been appointed for the consideration of questions of research not yet ripe for public discussion.

THE FIFTIETH ANNIVERSARY OF THE INSTITUTE.

Owing to circumstances over which the Council had no control, it was found impossible to arrange for celebration of the Institute's fiftieth anniversary. It is hoped, however, that it may be possible to carry out the projected programme at a later date.

TREASURER'S REPORT FOR THE YEAR 1921.

In presenting the Report for the year ending December 31st, 1921, I desire to express my regret that Mr. Williamson felt obliged to retire during the year. The Fellows should realize how much the Royal Anthropological Institute owes to his financial management during the recent critical years ; fortunately, his experience and counsel will still be at the service of the Institute on the Council and the Finance Committee.

The Revenue Account for 1921 shows receipts £1,839 8s. 5*d.*, and expenditure £2,125 12s., or a loss on the year's working of £286 3s. 7*d.* This is not, however, strictly comparable with previous years, since, with the concurrence of the Council, certain outstanding accounts—the rent for the Christmas quarter, and the November and December numbers of *Man*—usually met in January have on this occasion been paid in December, with the result that the accounts for the year 1922 will deal with liabilities incurred in that year's working. The year 1921 has had, however, to account for five quarters' rent and fourteen numbers of *Man*. On the basis of previous years the deficit would have been only £165 8s. 4*d.*, and it is this figure which the new Council will have to consider in framing their programme for the year.

The receipts from subscriptions and sales show a steady increase, while, owing to careful investments of previous savings and to certain past bequests, the Institute now receives nearly three times the amount that was available as dividends in the pre-war period. The increase in expenditure falls almost entirely under the heads of printing, paper, and postage. The *Journal* cost £806 as compared with £279 as late as 1917 ; *Man*, £414 (for twelve numbers), against £183 ; printing, chiefly authors' reprints, £174 against £27 ; stamps and parcels, £115 against £58. The cost of printing appears to have passed the maximum, though the rate of decline is slow. Part of the year's deficit is due to the decision of the Council not to economize at the expense of the *Journal*, but to continue to issue full numbers, even at the enhanced cost. Should the present rate of increase in the number of Fellows continue, this course will be amply justified ; but for the coming year, unless there are rapid accessions, it will be necessary either to reduce the *Journal* somewhat or to expend invested capital ; as the latter is naturally undesirable, it is to be hoped that each Fellow will endeavour to secure an addition to the numbers, in which event the position would soon be without anxiety and the full pre-war service restored.

FRANK C. SHRUBSALL,
Hon. Treasurer.

ROYAL ANTHROPOLOGICAL INSTITUTE

ACCOUNTS FOR

			REVENUE		
PAYMENTS.			£ s. d.	£ s. d.	£ s. d.
RENT (five quarters)				256 16 6	
<i>Less</i> Rent of small room	10	10 0			
Contributions of half cost of Meeting	2	1 3			
				12 11 3	
"JOURNAL"			806 15 4		244 5 3
<i>Less</i> contribution to cost of plates and tables			65 0 0		
					741 15 4
"MAN" (fourteen numbers)				484 3 4	
SALARIES				199 15 0	
HOUSEKEEPING				34 13 2	
ADVERTISING				15 9 6	
STAMPS AND PARCELS				107 5 3	
TELEPHONE AND TELEGRAMS				4 1 2	
PRINTING AND STATIONERY				174 12 0	
COAL, GAS, AND ELECTRIC LIGHT				10 18 11	
EPIDIASCOPE				8 9 0	
INSURANCE—					
Fire			5 0 0		
Employers' Liability			1 1 10		
					6 1 10
SUBSCRIPTIONS TO OTHER SOCIETIES, DIRECTORIES, ETC.					4 1 0
LEGAL EXPENSES			4 9 1		
<i>Less</i> Refund from London Association for the Protection of Trade			2 18 0		
					1 11 1
BANK CHARGES				1 2 9	
SUNDRIES				17 18 1	
"HUXLEY LECTURE"				4 16 0	
TYPEWRITER				6 5 8	
TRAVELLING				1 11 2	
AUDITORS' FEE				3 3 0	
LONDON ASSOCIATION FOR THE PROTECTION OF TRADE...				2 2 0	
CONJOINT BOARD OF SCIENTIFIC SOCIETIES (CONTRIBUTION)				5 0 0	
REPAIRS TO STOVE				3 6 6	
TRANSFER TO LIBRARY ACCOUNT				43 6 0	
Balance carried forward, 31st December, 1921				51 3 3	
				£2,176 16 3	

OF GREAT BRITAIN AND IRELAND.

THE YEAR 1921.

ACCOUNT.

RECEIPTS.		£	s.	d.	£	s.	d.
BALANCE BROUGHT FORWARD, 1st January, 1921.....					337	7	10
SUBSCRIPTIONS :—							
Current		837	2	3			
Arrears		89	10	6			
Advance		52	17	6			
Life		94	10	0			
		<hr/>			1,074	0	3
ENTRANCE FEES					13	13	0
SALE OF "JOURNAL"					244	11	4
SALE OF "MAN"					339	12	10
SALE OF "HUXLEY LECTURE"					4	4	0
ADVERTISING					4	16	10
DIVIDENDS		113	4	5			
„ (AMERICAN DOLLAR BONDS)		43	17	5			
		<hr/>			157	1	10
SUNDRIES					0	3	4
SALE OF BOOKS					1	5	0

£2,176 16 3

*ACCOUNTS FOR***LIBRARY**

	£	s.	d.
BOOKS AND BINDING	43	6	0

HOUSING

	£	s.	d.
BALANCE, 1921	121	12	10

£121 12 10

GRAIG LWYD

	£	s.	d.
BALANCE, 1920	2	7	9
PAYMENTS MADE TO COMMITTEE	37	8	4
BALANCE, 31st December, 1921	4	19	11

£44 16 0

ANTHROPOMETRIC

	£	s.	d.
PURCHASE OF INSTRUMENTS	69	5	6

£69 5 6

THE YEAR 1921—continued.

ACCOUNT.

	£	s.	d.
TRANSFER FROM REVENUE ACCOUNT	43	6	0

FUND ACCOUNT.

	£	s.	d.
BALANCE, 1920	103	14	0
DONATIONS AND INTEREST	17	18	10
	£121	12	10

COMMITTEE ACCOUNT.

	£	s.	d.
DONATIONS RECEIVED	44	16	0

£44 16 0

INSTRUMENT ACCOUNT.

	£	s.	d.
SALE OF INSTRUMENTS	58	19	6
BALANCE, 31st December, 1921	10	6	0
	£69	5	6

Treasurer's Report for the year 1921.

CAPITAL ACCOUNT:

<p>DECREASE IN VALUE OF £886 BURMA RAILWAY STOCK:</p> <p>Valued 31st December, 1920, at 96.....</p> <p>Valued 31st December, 1921, at 95.....</p> <hr/> <p>BALANCE CARRIED FORWARD 31ST DECEMBER, 1921.....</p>	<p>£ s. d.</p> <p>850 11 2</p> <p>841 14 0</p> <hr/> <p>8 17 2</p> <p>5,369 4 4</p>	<p>£ s. d.</p> <p>5,338 1 6</p>
<hr/>		
<p>BALANCE BROUGHT FORWARD 1ST JANUARY, 1921</p> <p>INCREASE IN VALUE OF £300 METROPOLITAN CON-</p> <p>SOLIDATED 3½ PER CENT. STOCK:</p> <p>Valued 31st December, 1920, at 80.....</p> <p>Valued 31st December, 1921, at 87½</p> <hr/> <p>INCREASE IN ESTIMATED VALUE OF SUBSCRIPTIONS</p> <p>IN ARREAR:</p> <p>Estimated Value 31st December, 1920</p> <p>Estimated Value 31st December, 1921</p> <hr/>	<p>£ s. d.</p> <p>240 0 0</p> <p>262 10 0</p> <hr/> <p>30 16 0</p> <p>48 6 0</p> <hr/> <p>17 10 0</p>	<p>£ s. d.</p> <p>5,378 1 6</p>
<hr/>		
		<p>£5,378 1 6</p>

BALANCE SHEET.

	£	s.	d.		£	s.	d.
Amount due for Anthropological Notes and Queries on 1st January, 1921	29	0	3	Books, Publications and Stock	3,493	6	0
Further sum received during the year	19	3	0	Furniture	200	0	0
Total outside Liability	<u> </u>			£886 Burna Railway Stock at 95	841	14	0
Receipts held in suspense:				£300 Metropolitan Consolidated 3½ per cent. Stock at 87½.....			
Deduction from Fellow on borrowed book				£155 Is. 3d. 5 per cent. War Loan (at cost price).....	262	10	0
Balance of previous Accounts:				Amount invested in 5 per cent. National War Bonds	147	10	0
Revenue Account.....	51	3	3	Subscriptions in arrear, valued at	500	0	0
Housing Fund Account	121	12	10		48	6	0

Treasurer's Report for the year 1921.

Graig Lwyd Committee Account.....	4 19 11	American Dollar Bonds, subject to a contingent liability in excess of their value ; <i>see</i> Treasurer's Report 1918.....	
Capital Account	5,369 4 4	Miscellaneous publication balances at amounts at which they stand in accounts, but probably of little value :	
		Amount 1st June, 1921	99 15 6
Less Anthropometric Instrument Account	5,547 0 4	Less received during the year	3 9 1
	10 6 0		
Overdraft at Bank 31st December, 1921 (Current Account)	5,536 14 4	Housing Account, Deposit at Bank	96 6 5
	123 2 8		121 12 10

£5,711 5 3	£5,711 5 3
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F. C. SHRUBSALL, *Hon. Treasurer.*

We have examined the Accounts of the Royal Anthropological Institute and have obtained all the information and explanations we have required. In our opinion the Balance Sheet at 31st December, 1921, is properly drawn up so as to exhibit a true and correct view of the state of the Institute's affairs according to the best of our information and as shown by the books of the Institute.

58, Coleman Street, E.C.
20th January, 1922.

JACKSON, PIXLEY & Co.,
CHARTERED ACCOUNTANTS,
Auditors.

PRESIDENTIAL ADDRESS.

THE UNITY OF ANTHROPOLOGY.

By the late W. H. R. RIVERS, M.D., D.Sc., LL.D., F.R.S.¹

I BELIEVE that I can best utilize the privilege of addressing you at our Annual Meeting if I seek to emphasize the unity which underlies the apparent diversity of the studies which come within the scope of the activities of our Institute. A glance through our annual programme will show the great variety of our interests, but it is only too rarely that we have brought to our notice problems to the solution of which more than one branch of anthropology can contribute. Few are the occasions on which we hear papers which illustrate the relation to one another of the different aspects of our science. There is, I think, a danger that the various topics brought before us may resemble the objects on the walls and in the cases of so many of our museums in being regarded merely as curiosities, each perhaps having some special interest of its own, and that in the wealth of the details of anthropology we may fail to recognize the threads which connect them into a coherent whole. It is well that we should pause now and then and ask why the manifold topics brought before us should excite our interest, and why we should consider the relation in which the different branches of our science stand to one another, as well as to other branches of learning.

There is one department of our work in which no one can seriously engage to any purpose without recognizing the intimate relation to one another of the different branches of anthropology. It is because of my special experience in ethnography that the unity of the subject seems to me so striking and the recognition of this unity so important. It is a characteristic of the simpler societies of the earth that, though it is possible to distinguish in their cultures the different aspects we label social, political, economic, religious, æsthetic, etc., these aspects are so interdependent, the social functions of different kinds so closely related, that it is hopeless to expect to understand any one department of culture without an extensive study of other departments, which in a society such as our own have, or seem to have, a far greater degree of independence. No one can expect to do more than second-rate ethnographic work in a simple society if he specializes his interests and confines his attention to some one aspect of the life of the people he is studying.

¹ Fellows of the Institute and other readers of the *Journal* will have heard with deep regret of the untimely death of Dr. W. H. R. Rivers, which took place suddenly, as the result of an operation, on June 4, 1922. Dr. Rivers' services to the Royal Anthropological Institute and to the Sciences of Anthropology and Psychology need no recapitulation here to indicate the measure of the irreparable loss which has befallen science through his death. An obituary notice of Dr. Rivers appeared in *Man*, 61, 1922.

As I have pointed out elsewhere,¹ it is a feature of ethnographic work that the clue to the solution of a problem in social organization may come to one some day while making inquiries into the technique of fishing, or of a problem concerning migrations when obtaining a magical formula, and these are only striking examples of an interdependence of different aspects of culture which, though a character of all forms of human society, is especially obvious among the simpler and more backward societies.

I propose to devote the chief part of this address to examples of the unity of anthropology in connection with its historical aspect. But it is the study of human societies as we now find them which has forced this unity upon my own attention, and the interest which many of us have in the historical aspect of anthropology must not be allowed to distract our attention too much from the equally important task of trying to understand human societies as they are, and the relation to one another of the many aspects from which they may be regarded.

The unity which is so apparent to one who studies simple cultures in the field is a necessary feature of any society. It is only more obvious to the ethnographer who works in Oceania or Africa than to the student of civilized institutions, because the simpler character of Oceanic or African society makes the interdependence more obvious. This unity is of the same kind as that of the living organism, the activity of every part of which contributes to the completeness and harmony of the whole. In a society one factor upon which unity depends is that every form of social activity, whether it be a marriage regulation, a religious rite, a mode of warfare, or the polishing of an implement, is in the last resort determined by psychological motives. The greater number of the topics which are brought before our Institute are connected with one another in that they are all means whereby we may be enabled the better to understand mental activity, and especially those forms of mental activity which come into play when men act collectively. The larger part of the material of our science, whether it be gained through the comparative study of existing peoples or derived by inference from the monuments of the past, not only forms matter for the student of social psychology, but, through its psychological interest, is given a unity which it would not otherwise possess.

Another pattern which serves to connect the various branches of anthropology is their historical interest. This pattern is even more comprehensive than the psychological interest, because there come within its scope the physical characters of the different varieties of mankind, and the larger part of this address will deal with the unity given to anthropology through its relation to history. I shall attempt to illustrate how the culture of savage and barbarous peoples of to-day, which is the special object of the ethnologist's interest, is not merely, in spite of the absence of written documents, capable of becoming the subject-matter of history,² but that it

¹ *Notes and Queries on Anthropology*, 4th Edition, p. 114. London, 1912.

² See W. H. R. Rivers, *History and Ethnology*. Helps for Students of History Series. London, 1922.

is capable of helping us to understand the civilizations of the past, which are generally recognized as coming within the field of the historian's interest.

Anthropology, in fact, stands midway between the sciences that study Nature on the one hand, and history and other humanistic studies on the other. Its methods are, or should be, those which it shares with the students of Nature, while its subject-matter covers largely the same ground as history, literature, art, and religion. Whenever we compare the products of any of these forms of human activity produced by different branches of mankind, even branches of mankind so like one another as the existing peoples of Europe, and try to get back to the vicissitudes of its past or to its origins, we are dealing with anthropology. We are not merely providing material for the use of the anthropologist, but we are not likely to succeed in our task unless there are brought to bear upon it the point of view and the methods of anthropology.

The branch of anthropology which is most obviously related to history is archæology, meaning by this term the study of the manufactures, monuments, and inscriptions of the past. I propose to devote the major part of this address to the consideration of its relation to ethnology, by which I understand the comparative study of the cultures of existing peoples. My object will be to show how, through the closer combination of the two, anthropology may the better contribute to our knowledge of the early history of mankind.

Although we include in our membership both archæologists and ethnologists, and devote perhaps an equal amount of attention to these subjects, it must be acknowledged that the two groups of workers often pursue their way as if they had little connection with one another. This is especially the case when archæologists are dealing with the monuments of such countries as Greece or Rome, concerning whose cultures written documents have already given us abundant knowledge. In such cases the archæologist doubtless feels that he already has an ample task in supplementing and correcting the documentary evidence, and carrying back the record to times for which no written documents are available. In such a region as Central America, on the other hand, where the archæologist is dealing with cultures for which the written records are scanty or mainly second-hand, and the inscriptions limited in scope, the wider interest goes towards the existing cultures of the continent, so that the alliance with ethnology is closer. In either case, however, there is a tendency to limit and specialize the field of inquiry and a failure to regard human culture as a whole, to the full understanding of which any part may be able to make its contribution.

Such a country as India, which possesses so vast a literature from the past, and still preserves in its less accessible districts peoples with cultures probably but little changed since the times when this literature was written, provides a field which, when it is fully worked, will certainly serve to show the essential unity of archæology and ethnology, while it is to be hoped that such work as that which is

coming from the combined attack on the ethnology and archæology of Polynesia, now being undertaken by American anthropologists, will serve to bring into still stronger relief the essential unity of the two disciplines.

That the ethnology of any one region of the earth has an intimate connection with its archæology is, or should be, so evident that it is not necessary to dwell upon it. It is the main purpose of this address, so far as it deals with the relation between archæology and ethnology, to point to a less obvious relation between the two.

If those ethnologists, among whom I count myself, are right who suppose that in the times when the monuments and scripts of ancient Egypt and Mesopotamia were being constructed and written, people were travelling widely over the earth,¹ implanting their cultures in remote regions, there would thus have been set up a relation between the rude cultures of to-day and the civilizations of the past which cannot be neglected by any who seek to understand the history of mankind. It must always be remembered that in one aspect of human culture, and that perhaps the most important, viz., the psychological, the evidence provided by archæology must always be deficient. Monuments, even when provided with inscriptions, can never give any but indirect and incomplete evidence of the ideas, beliefs, and sentiments of the people by whom the monuments were constructed or the inscriptions written. If, however, the peoples of early times planted their culture in distant places, or even if they only gave through their beliefs and sentiments a stimulus to the growth of new cultures, it becomes possible that the study of these distant peoples may serve to supply gaps in the literary records of the ancient civilizations, and thus throw an invaluable light upon their history.

It is not possible within the limits of this address to give any adequate account of the evidence which is leading many of us to believe that at the time when the ancient civilizations of the Orient were flourishing their members possessed craft capable of carrying them to far distant regions of the earth, and had the energy and enterprise to make great journeys, both by land and by sea. I shall be content to give you one piece of evidence which, though not hitherto published, I am able, through the kindness of the Rev. C. E. Fox, to bring before you. This information affords evidence of the most striking kind that the culture of the early dynasties of Egypt was carried, directly or indirectly, to so distant and so apparently inaccessible a spot as the Solomon Islands.

Mr. Fox has for some years been living and working amongst the peoples of San Cristoval, the southernmost island of the Solomons, and has there amassed a wealth of knowledge concerning the people and their beliefs, a small part of which has already been published in our *Journal*.² In one part of San Cristoval the chiefs

¹ For recently acquired confirmation of the view from archæological evidence see A. H. Sayce, *Man*, 1921, vol. xxi, p. 164.

² Vol. xlv (1915), p. 131, and vol. xlix (1919), p. 94.

belong to, or have been adopted into, a special clan called the Araha, which differs from the other clans of the region in its mode of descent, being patrilineal, while the others follow descent and inheritance in the female line. The Araha have many customs and beliefs peculiar to themselves, and in sketching the special features of their social behaviour I may begin with that according to which they preserve their dead by means of evisceration and embalming.

Elliot Smith has shown¹ a striking similarity between the modes of preservation of the bodies of the dead in Torres Straits and that of certain periods of Egyptian history. Among the Araha of San Cristoval the thoracic and abdominal viscera were removed as part of the process of preservation. This was done through incisions in the side of the body and not in the middle line, thus resembling the practice both of Torres Straits and Egypt. The body-cavities were then stuffed with wood-shavings and the incisions closed with lime, so that the process can be regarded as definite embalming.

In San Cristoval, however, the resemblance to the mortuary customs of ancient Egypt goes much further than in Torres Straits, for the bodies of the chiefs are placed in cavities hollowed out within mounds, often made of stone and shaped in pyramidal form with flat tops, so that they resemble the mastabas of early Egypt. From the surface of the mound of San Cristoval a shaft leads down to the recess within which the body lies. On the top of the mound there is often a structure consisting of a table-stone resting on three or four uprights, having the characteristic form of a dolmen. On or by the side of this dolmen stands an image in human form, carved out of coral or stone, which is believed to represent the dead man, and to act as the abiding-place of the soul which left his body at his death. In a recent letter, Mr. Fox tells me that he has seen one statue of stone so large that six men were unable to carry it. Not only does the image on the burial-mound reproduce, in its general character, one of the most characteristic mortuary customs of ancient Egypt, but Mr. Fox draws attention to a special feature of the images which forms a striking resemblance with Egypt in a point of detail. The statue is in a seated posture, and at the back of the head a pigtail-like structure reaches down to the stone surface upon which the image is placed, thus reproducing a feature of the statues of Cheops, Chephren, and Mycerinus, the builders of the great pyramids of Egypt.

Mr. Fox has not told us of any case in which there is a parallel to the representation of a falcon, which is frequent on the back of the heads of the Egyptian statues, but it may be noted that the Araha clan, whose members are buried in the flat-topped mounds so like the mastaba of Egypt, have as their totem a species of hawk called *hada*.

The resemblance between the customs of the chiefs of the Araha and the kings and nobles of ancient Egypt is not confined to their mortuary rites. The Araha

¹ *The Migrations of Early Culture.* Manchester, 1915.

believe in their possession of two souls, with different destinations after death, one passing into the statue already mentioned, while the other flies away to an "isle of the blest" on Guadalcanar, to the west of San Cristoval, where it attains its final form by bathing in a sacred river. It is noteworthy that, though the soul of an Araha thus reaches its final home by means of flight, a canoe forms a prominent feature of the funeral rites of this clan.

The Araha have a definite cult of the sun. When the wife of an Araha conceives, she is believed to enter the sun, and when her husband dies she may not take another human spouse, but is said to "marry the sun." The circular ornament called "the face of the sun" is only worn by the Araha. They also worship a mythical winged serpent, which has a man's face but the breasts of a woman.

Though the use of stone is not confined to the Araha, it is especially prominent in their culture. They are the builders of the stone mastaba tombs, the makers of stone statues, stone carvings, and stone altars, and they use stone seats, stone walls, and river-dykes of stone. The Araha have a great belief in the life-giving power of water, and with them are especially associated the use of red as a sacred colour, the practices of tattooing and ear-piercing, and the use of cowries and the shell-conch, while that clan alone has the tradition of descent from the offspring of an incestuous union.

Those who know Mr. Perry's analysis of Indonesian culture¹ cannot but be struck by the close agreement between this culture-complex of the Araha and that which he has ascribed to the stone-using immigrants who have become chiefs in the East Indian Archipelago, while there is also a remarkable agreement with the elements of culture which Elliot Smith believes to have become associated either in Egypt, or in the course of the movements by which the Egyptian complex spread about the earth. The significant point is that these elements of culture are not in general use among the people of San Cristoval, or even in any one district of that island, but are the especial attribute of the chiefly clan of the Araha. It is only the refined and exact ethnographical methods of Mr. Fox which have brought out so clearly this evidence for the transmission of Egyptian beliefs and customs to Melanesia.

It is not, however, the purpose of this address to attempt to demonstrate the spread of Egyptian culture or its survival in these distant Melanesian islands for thousands of years after it has disappeared from the place which gave it birth. Mr. Fox's evidence must make it difficult for the most hardened sceptic to deny that it is at the least a legitimate hypothesis that there has been such spread and survival. The Egyptologist should welcome the possibility that these remote savages have preserved early beliefs and practices of the ancient civilization to which he devotes his studies, and may thus provide evidence to supplement and elucidate his often insufficient records.

¹ *The Megalithic Culture of Indonesia*. Manchester, 1918.

There are definite reasons why such a region as Melanesia should have preserved features of culture, all traces of which have disappeared elsewhere. Egypt itself has, since its period of splendour, been overrun by one foreign invader after another, including Islam, with its highly destructive influence, until nearly all traces of its ancient beliefs and customs have disappeared, only such objects as the *shadîf* having survived the vicissitudes of its history. India, which must have served as a most important resting-place in the eastward spread of Mediterranean culture, has not only been similarly penetrated by many later influences, but the most important of these, the incoming of the Vedic pastorals, has led to the development of the culture we call Hinduism, in which only a penetrating analysis, an analysis which has as yet hardly begun, can discern any trace of the beliefs and customs to the former presence of which witness is borne by the megalithic monuments of Southern India.

Passing still further eastward we come to the region of Indonesia, where the megalithic culture has been so overlain by the later influence of Hindu, Malay, Islamic and Chinese invasions, that it has needed the penetrating insight of Mr. W. J. Perry to distinguish the traces of its early phase of megalithic culture.¹ We have to travel to the remote islands of Oceania before we find mortuary practices so closely resembling the mummification of ancient Egypt as those of Torres Straits and San Cristoval, and burial of the bodies of the dead kings and chiefs in pyramidal mounds, as in San Cristoval. We have to reach New Guinea,² San Cristoval, and the New Hebrides before we discover images in human form designed to enshrine the souls of the dead, so clearly comparable with the mortuary statues of Egypt, while it is probable that the great statues of the still more remote and inaccessible Easter Island³ had a similar purpose. Again, though dolmens occur in Indonesia, we have to travel to the Solomons to find them forming part of burial monuments, and as far as the New Hebrides to see them still being constructed in the course of the ceremonial of a cult of the dead.⁴

The special point I wish to make in this address is that it is just because these islands of Oceania are so remote from regions which have been throughout human history the centres of civilization that they have preserved with so great fidelity the beliefs and customs of the ancient world. It is because of their remoteness, and because they have not been reached by the many later influences, which have obscured or obliterated the earlier cultures of Europe, India, and Indonesia, that the conservatism of their people has preserved so many traces of the enterprise and hardihood which led voyagers from the early civilization of the Orient to undertake

¹ *The Megalithic Culture of Indonesia*. Manchester, 1918.

² See A. C. Haddon's article "New Guinea," Hastings' *Encyclopædia of Comparative Religion and Ethics*, vol. ix, p. 350.

³ For evidence to this effect see *Folk-Lore*, vol. xxxi, p. 294. 1920.

⁴ See article "New Hebrides," in Hastings' *Encyclopædia of Comparative Religion and Ethics*, vol. ix, p. 354.

journeys of such vast extent. No one, whose interest in the past is so great that every possible clue to its understanding is of value, can ignore the possibility that these remote islands have preserved beliefs and practices which may serve to indicate the beliefs held by the peoples of ancient days.

It is as yet too early for dogmatic statement concerning the exact nature of the contributions which the study of these remote regions may make to our knowledge of early civilizations. A long row has yet to be hoed before we can estimate with any exactitude the way in which the evidence from these remote regions can be utilized, but though it may be too early for the statement of definite conclusions, it is not too early for the recognition of the intimate relation between the civilizations of the past and the rude cultures of the savage and barbarous races of the present. It is to be hoped that such studies as those of Mr. Fox will lead students to see far more clearly than at present that archæology and ethnology are not separate and independent disciplines, but are closely related and complementary branches of the comprehensive science of anthropology.

In dealing with the relations between archæology and ethnology I have dealt only with the contributions which ethnological discoveries may have upon the better understanding of ancient civilizations. To that branch of archæology which deals with still earlier phases of Man's history the value of the study of the more backward races of to-day is so obvious that it needs little more than mention. I should like, however, to draw attention to the interest in this respect of a masked and bearded figure found during the recent exploration of the cave of Enlène,¹ and to the points of resemblance between this palæolithic representation and features of the esoteric cults which still exist in such regions as Africa and Melanesia. That in such relatively early days of inquiry into palæolithic culture parallels with existing lowly cultures should already have been found raises the brightest hopes for the mutual aid which ethnology and the archæology of palæolithic times can render to one another, while it is probable that we are now on the eve of discoveries based on ethnological data which will revolutionize our views concerning the neolithic phase of Man's early history.

I have dealt at length with the relations between archæology and ethnology, and how by the fuller recognition of their essential unity they may the better contribute to the understanding of the history of mankind. I must deal with other aspects of anthropology more briefly. I have already mentioned the relation of psychology to the other branches of our science. I should have liked to consider the ways in which our psychological knowledge of the individual helps us to understand his social reactions, and the still more important ways in which the comparative study of Man's social reactions will enable us to build up a comprehensive science of psychology.² Perhaps the most interesting of the many recent developments of

¹ *Man*, 1921, vol. xxi, p. 183.

² See *Sociological Review*, 1916, vol. ix, p. 1.

the study of mind is the way in which the older method of introspective observation of the individual consciousness is being supplemented, often, indeed, supplanted, by the broad comparison of different aspects of animal and human behaviour. Among these developments the study of Man's social behaviour, and of its variations among the simpler human societies, is coming to take a more and more prominent place. To treat this subject even cursorily would, however, have absorbed the whole of my available time. I must be content to have mentioned this aspect of the unity of anthropology, and pass on to deal briefly with two branches of anthropology—philology and somatology. At present these two disciplines too often pursue their independent paths, and lack the co-ordination with other branches of anthropology which would necessarily follow if the unity of the science were more widely recognized.

I will begin by considering the relation of philology to other branches of our science. The comparative philologist has long recognized that his studies can provide evidence for former distributions of culture. Thus, he has recognized that the common existence of words for certain objects, such as the ox, the wheel, the plough, and bronze, throughout the Indo-European languages, shows that these objects formed part of the culture of the people by whom this family of languages was diffused over Europe and Southern Asia. But he has not yet recognized, or only very imperfectly, that the helpfulness may be mutual, and that the study of social activities may enable him the better to understand, not only distinctions of vocabulary, but also of grammar and syntax. Although great authorities have emphasized the value of living languages, especially in the psychological treatment of speech, the comparative philologist still continues to devote his attention almost exclusively to the material provided by the dead languages of Europe and India. It has often struck me as strange that the comparative philologist can turn over the pages of books, such as those of Ray and Codrington (perhaps he does not turn them over) without seeing that in Melanesia he could study living examples of phonetic changes similar to those for which his only sources at present may be the records of dead languages; that even in one Melanesian island he would find in progress many of the interchanges with which he is familiar in the Indo-European languages, but then only with the fixity given to them by the necessity for expression by means of writing. Thus, he may not only find such consonants as p and q, t and k, b, f, p and v, g and k, used indifferently, but he would also hear sounds so intermediate between them that by the ear alone it may be hardly possible to tell which of two or three consonants is being uttered. I have wondered how he can resist the impulse to seek out these spots where he can study, by living examples, the mechanism of phonetic change and the causes to which it is due.

In a recent paper of great interest Malinowski¹ has shown how closely intertwined is the study of language with other aspects of social heritage, and that even

¹ *Bulletin of School of Oriental Studies*, 1920.

the collection of linguistic material suffers because the failure to recognize the close relation between philology and other branches of ethnology has left us without any adequate theory of language to serve as a guide.

From quite another point of view I have tried to show¹ that certain features of Melanesian grammar, such as the distinction between the inclusive and exclusive first person plural, and that between possessive pronouns proper and what have been called possessive nouns, are capable of being explained by social reactions. There can be little question that it is only by the wide comparative study of social activities that we shall come to understand such problems as those presented by the prominence of grammatical gender in the Indo-European, Semitic, and Hamitic families of language, the vast importance of classificatory prefixes in the Bantu languages, or the prevalence of instrumental prefixes in the languages of North America.

Moreover, just as in psychology we are now making great advances by combining the evidence from the observation of disease and the study of childhood with that derived from the comparative study of human custom and belief, so may we expect great advances in philology when the student of language ceases to confine his attention to the mere form and arrangement of the words used by different peoples of the earth, and brings these into relation with the results of studying speech by other methods, and especially by the method of pathology. One of the most interesting features of the recent work of Head² on aphasia is that it reveals the presence of different attitudes towards speech, and contributes to the understanding of the evolution of different forms of language, in a way which cannot be neglected by the comparative philologist. It is not without significance, for instance, that an officer who, through a wound of his cerebral cortex, has lost the power of naming colours, should still be able to say that an object is of the same colour as the lapel of his tunic or the band on his arm, having thus been reduced by neural injury to the state of the many peoples who denote colours by their resemblance to natural objects, and have only two or three words by which they can name colours in independence of the objects of which the colours are attributes.

I will conclude my survey of the field of anthropology and my attempt to demonstrate the unity of the science by considering the relation of physical anthropology or somatology to other branches of the subject. Whether owing to the fact that those who devote their attention to somatology are primarily biologists, to whom the study of culture in general, and of its psychological or historical aspects in particular, do not appeal, or whether there be some other reason, it must be acknowledged that the study of Man's physical structure as now pursued, both in this country and elsewhere, shows a striking lack of integration with

¹ *History of Melanesian Society*, vol. ii, p. 486.

² *Brain*, vol. xliii, 1920, p. 87.

other branches of anthropology. By means of such integration the study of somatology is not only capable of being of the greatest service to ethnology, but in my belief it might thence receive ideas and stimuli by which it would be itself advanced. With the exception of work carried out or fathered by Professor Fleure in this country, I do not know of any current researches in which physical anthropology is helping towards the solution of those problems concerned with the movements of human beings over the earth's surface which must have taken place if early forms of culture have had the wide dispersal which, to say the least, forms one of the chief working hypotheses of anthropology in general.

To take a special instance, no one who has passed through the islands of Melanesia can doubt for an instant that this region has been the seat of the mixture of different varieties of mankind upon the most extensive scale. Whether we attend to colour of skin, nature of the hair, or shape of the nose, we find in that archipelago as great a diversity as exists among the different peoples of Europe. One who traverses Melanesia from south to north and sees, for the first time, the intense blackness of a native of the Western Solomons, must be as much impressed as one who, having lived all his life in a Scandinavian village, sees for the first time a Portuguese or Italian of the swarthy type. In Melanesia we find within one small district people resembling closely the Australian on the one hand and the Polynesian on the other, with types intermediate between the two. Moreover, a rough survey suggests that these differences are correlated with linguistic and other cultural distinctions, and this correlation provides a most suggestive field of inquiry for the physical anthropologist, and promises him ample fruit if he will join in the quest to discover the nature of the early movements of mankind. It is a striking feature of Melanesian society that the cultures we have reason to regard as immigrant are especially prominent in the small islets bordering on such large islands as Malekula in the New Hebrides or Malaita in the Solomons, and a comparison of the physical characters of the people of the smaller and larger islands, as well as of those which distinguish the coastal from the inland inhabitants of the latter, should provide material of the greatest promise. And yet, amidst the many interests, social, religious, linguistic, which have led to so great an increase in our knowledge of Melanesia in recent years, interest in the similarities and differences of the physical character of the people themselves has been almost entirely lacking. The comparative study of culture has provided the physical anthropologist with working hypotheses which would certainly lead to fruitful results. Such results, however, will not be attained by the examination of skulls of uncertain origin¹ in museums, studied without knowledge of the cultures possessed by the men of whose frames

¹ As an example, I may cite the head-hunting districts of the Solomons. Most of the skulls obtained in an island of this district will have come from elsewhere, but there is always the possibility that the skull may be that of an inhabitant of the island where it is obtained.

they once formed part. It is only by the close alliance between the somatologist and the student of culture that any real advance can be expected.

I have spoken of Melanesia because that is the part of the world I know best, but there is little question that what I have said of it is true of other regions. I believe that there is no branch of our science in connection with which the failure to recognize its unity has had more blighting effect than is the case with physical anthropology : no branch where recognition of this unity has a greater promise of advance.

At the same time there is no part of the science the material of which can be so easily collected. The collection of somatological data is not open to the many sources of misunderstanding by which even in the most expert hands the study of social behaviour, of language, and of the psychological aspects of anthropology are beset. To one with an anatomical training of an ordinary kind there lies an easily accessible field, the neglect of which I believe to be a result of undue specialism, a result of the failure to appreciate a unity of anthropological studies which, if grasped, must make apparent the abundant opportunity with which the physical anthropologist is now presented.

I have devoted the main part of this address to an attempt to show not only that the different branches of anthropology are more intimately related to one another than is often supposed, or at any rate more than shows itself in practice, but that there is also a close relation between anthropology and disciplines sometimes regarded as wholly distinct from it. The question which I shall now consider—it can only be very briefly—is how we, as an Institute, can help in bringing about a closer collaboration between the different branches of anthropology, and in making our corporate personality more influential in helping the advance of knowledge.

At the present time many societies having their seat in London are engaged in advancing the various branches of knowledge which are, or might be, included under the comprehensive title of anthropology ; not only societies dealing with different aspects of the subject, archæological, antiquarian, philological, etc., but also numerous societies, such as the Royal Asiatic Society, the African Society, the Japan Society, etc., which devote their attention to different regions of the earth. One possible measure towards the recognition of the unity which should animate all these societies would be to fuse them into one body, with separate sections, which might serve as a general academy of the sciences which deal with the study of Man. I believe, however, that it is in many ways an advantage to have independence of action on the part of those who, for one reason or another, have come to take an especial interest in different aspects of the study of Man, or have, through residence or other accident, come to be interested in the culture of some one country or continent. The line of action, in my belief, best adapted to the case is to bring about collaboration and mutual helpfulness, without sacrificing the independence which exists at present. One means to this end which the Council of the Institute,

in common with those of other societies, has already had under consideration, is the housing of societies with cognate aims under one roof, so that they may have the common use of meeting rooms and other needs of such societies as ours. At the present moment our Institute is housed most inadequately, while other societies, such as the British Psychological Society, the Folk-Lore Society, and the African Society, are without any permanent homes. Much might be done to advance the recognition of the unity which should characterize the study of human culture if these societies lived together under one roof, shared the convenience of common lecture-rooms, and gave mutual facilities of one kind or another which would encourage those interested in one aspect of anthropology to learn something about the rest.

Especially prominent among the facilities which such a plan would assist is the common use of libraries, and the possibility of being able to obtain the services of some one possessing the special knowledge which is now recognized as being needed for the work of a librarian. Perhaps the weakest part of our own equipment is our library, which, being now recruited chiefly by means of books sent to the Institute for review and journals obtained by exchange with our own, is wholly inadequate to our needs.

The multiplication of specialist journals, the increase in the price of books, the coming into scientific activity of the new countries which the break-up of the Russian and Austrian empires has created, are making it impossible for any one society to obtain the literature it needs. Moreover, it is especially the journals and books on the borderline of its chief activities, which each society is unable to buy when any question of additions to its library arises. Such collaboration as is proposed should make it possible to have in the common home a library for the use of all. Whether this library should be a unity, or form compartments of larger or smaller size, each connected with its own Society, is a detail. The essential point is that the common housing of societies with cognate aims will make it possible to provide a collection of the books needed by those whose study is Man. This would do more than any other single measure to emphasize the unity of aim which should actuate all those who devote themselves to this study. Doubtless in such common housing and common use of books there would have to be some give and take, some unselfishness on the part of the larger and more prosperous societies towards their weaker brethren; but if all had the proper enthusiasm for the growth of knowledge, questions of equality should not stand in the way of collaboration.

The general ideal which should guide our movement towards mutual helpfulness should be of much the same kind as that which is coming to be the ideal of our empire; independence of its constituent parts, combined with such measures towards mutual helpfulness as do not interfere with this independence, and with such elasticity as will allow special developments, and prevent the fixity which is a danger where the passion for organization is so great as to interfere with liberty.

At the same time we should do our utmost to attract into our own body all those who can contribute in any way to advance the study of Man. The aim of our Institute should be that it may become a centre for the unification of the manifold interests which anthropology includes. Not only should we endeavour to draw into our number all those interested in any aspect of our science, but we should do far more than at present to bring before our meetings subjects that emphasize the relation between the diverse interests and show their helpfulness to one another, and illustrate the nature of the contribution which each can make towards the common goal.

One measure to serve this purpose, which has been considered by the Council during the last year, is the establishment of smaller research meetings, assembling perhaps in the afternoon, and designed especially to attract the members of the growing body of younger students who are being educated in London. In these meetings the proceedings might perhaps be less formal than those of our evening gatherings. By attracting the attention of those with incipient interests, to the general bearings of different branches of anthropology, such meetings may serve as a most valuable means for bringing recruits into a field which is in such urgent need of workers.

SOME BALTIC PROBLEMS.

By C. A. NORDMAN.

THE July-December, 1919, number of this *Journal* contains an interesting article by Mr. Harold Peake on "The Finnic Question and some Baltic Problems." Mr. Peake, starting from an anthropological point of view, though employing also an argument that is, in many respects, based on archæological material, brings forward a theory concerning the origin of the Scandinavian and Finlandish¹ peoples, which in rather fundamental points differs from earlier hypotheses. Perhaps under such circumstances an attempt may be justified to explain some of the problems touched upon by Mr. Peake in his suggestive article, as they are understood by a northern archæologist. I am greatly indebted to the Council of the Royal Anthropological Institute, which has, in the following pages, given me the opportunity to make such an attempt. I intentionally, however, confine myself to the archæological material; this restriction, also necessitated by the brevity of the article, is undoubtedly a drawback, in that it prevents an exhaustive treatment of the problems under consideration, but the loss is perhaps outweighed by the fact that one always writes with greater accuracy on subjects included within one's own field of study. The anthropological material, moreover, concerning some of the culture-groups mentioned below, is so scarce that it fails to furnish a sufficiently strong basis for broad conclusions.

Several of the central questions suggested by the investigation into the northern Stone Age still await solution. These are especially the questions that refer to the peoples themselves, the peoples who formed that material culture with which we have become acquainted through a century of study. In many cases we fail to progress beyond a mere statement of the problem or a formulation of a working hypothesis. Our opinions are often contradictory, the final synthesis has not yet been reached. I am anxious, in such cases, to make possible a verification of my own statements and conclusions through references to the literature at hand. Furthermore, I have endeavoured so to arrange this paper that the reader may decide instantly whether the discussion is concerned with facts and conditions that are undeniably true, or merely with debatable assumptions or more or less well grounded hypotheses.

During these last years Oscar Montelius has resumed the study of a subject that has long been of interest to him. He sees in the so-called almond-shaped flint

¹ In this paper the adjective Finlandish refers to the entire population of Finland—both the Swedish and the Finnish elements. The adjective Finnish, on the other hand, has reference to the part of the population that belongs to the Finnish race.

implements—pointed oval flints, often having finely chipped edges and somewhat resembling in form certain flint blades of the Solutrean period—the earliest evidence of a settlement in the North, a settlement which, broadly speaking, was contemporary with the Solutrean period.¹ Apart from the fact that the parallel with the Solutrean must, in every case, be chronologically misleading, it is doubtful if one can ascribe to the almond-shaped implements a very great age. It is possible that some of them really belong to the earliest Northern Stone Age, although proof of this has not, as yet, been found; on the other hand one can, however, unhesitatingly assign a part of these almond-shaped tools to the end of the Stone Age.²

Accordingly, the chronological position of these implements is uncertain, and we must seek in another direction if we wish to secure a conception of the beginning of the Stone Age in Scandinavia. The material is not plentiful: three picks of reindeer-antler, one piece cut off from a reindeer-antler, and an arrow-head of flint, all from Denmark, both from the islands and Jutland.³ The form of the reindeer-antler picks points to Germany as the source of the little-known culture which the Danish examples illustrate; similar picks are known in Posen,⁴ Brandenburg,⁵ in the Rhine region⁶ and in the neighbourhood of Hamburg.⁷ The relation with the French Magdalenian period, on the other hand, is not as yet clear, though there is a possibility that both the German and the Danish objects were influenced by the West.

The connection with subsequent periods proves to be equally uncertain, not because the following ages failed to leave remains, but because there are no intermediary forms between the reindeer-antler tools which should be attributed to the commencement of the forest period, if not to a still earlier time, and the rich civilization of the later Ancyclus period which is chiefly represented by the large finds from the bogs of Mullerup and Svaerdborg, both located on Zealand.⁸ The

¹ Oscar Montelius, "De mandelformiga flintverktygens ålder," in *Antikvarisk tidskrift för Sverige*, vol. xx, 1919; Nils Niklasson, in *Korrespondenz-Blatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte*, vol. li, 1920, pp. 19 *sqq.*; cf. also *The Antiquaries' Journal*, vol. i, 1921, pp. 98–104.

² C. A. Nordman, in *Finskt Museum*, 1920–21, pp. 65 *sqq.*

³ K. Friis Johansen, "En Boplads i Svaerdborg Mose," in *Aarbøger for nordisk Oldkyndighed* (cited *Aarbøger*), 1919, pp. 224, *sqq.*; *id.*, "Une station du plus ancien âge de la pierre dans la tourbière de Svaerdborg," in *Mémoires de la Société des Antiquaires du Nord* (cited *Mémoires*), 1918–19, pp. 347 *sqq.*

⁴ L. Koslowski, in *Przegląd archeologiczny*, vol. i, 1919, p. 90, pl. i, fig. 1.

⁵ R. Stimming, "Die Renntierzeit in der märkischen Havelgegend," in *Mannus*, vol. viii, 1917.

⁶ C. and E. Rademacher, *Neufunde des prähistorischen Museums der Stadt Köln*, 1916, plate iii, fig. 36; this specimen seems, however, to be somewhat dubious.

⁷ G. Schwantes, *Aus Deutschlands Urzeit*, 3rd ed., fig. 28.

⁸ G. Sarauw, "En Stenalders Boplads i Maglemose ved Mullerup," in *Aarbøger*, 1903; *id.*, "Maglemose, ein steinzeitlicher Morfund im Moor bei Mullerup auf Seeland," in *Prähistorische Zeitschrift*, vol. iii, 1911, and vol. vi, 1914; L. Koch, "Nye Bidrag till Mullerupkulturens geologiske Alder," in *Meddelelser fra Dansk Geologisk Forening*, vol. v, 1916; K. Friis Johansen, *op. cit.*

former place has given the Mullerup civilization the name by which it is known among the Danish archæologists.

The Mullerup civilization is a lake civilization : the settlements are situated on low peninsulas or on islands of ancient lakes which have since become bogs ; peat layers, varying in thickness, cover the prehistoric sites. By hunting and fishing alone could the Mullerup people gain a livelihood. Numerous animal bones and antiquities of bone and horn give evidence of the kind of game sought. The animals of the woods and the lakes, but not those of the sea, have left their tribute. The elk and the aurochs, that later disappeared, played a big rôle in the chase ; the dog had, even at that early time, become man's comrade.

Among the antiquities, objects of bone and horn prevail to an extent unequalled in any later age. Barbed harpoons of bone, probably fish-spears, were found in large quantities, and besides bone points with flint barbs and plain, smooth bone points were used. A bone tool, sometimes called a seam-smoother, sometimes a netpin, etc., belongs to the most important types. Big socketed bone celts and bone clubs have been found in limited numbers, as well as fish-hooks and knife-handles. The perforated axes were fashioned of stag- or sometimes elk-antler, and were made in different ways, one type being provided with an edge of flint or horn. Many examples of these chisel-like horn edges are known, and comparable to them are a few horn celts. Finally, some pick-like weapons, and also other forms of implements, were produced, but they may be passed over in this brief summary. Sometimes the weapons were ornamented, usually with regular geometric designs of dots and lines, but in exceptional cases with animal pictures, etc. Among the flint antiquities, the triangular, pygmy flint points, that were found in great quantities in the Svaerdborg settlement, are the most worthy of note. With them belongs a small number of lancets, and segment-shaped flint points. Flint cores, belonging to a type which later on disappears, are very common, and small flint flakes occur in large numbers. Scrapers made of flakes, and small round scrapers are common, and chipped celts too, are not quite unusual, but triangular hatchets, the French tranchet, are, on the contrary, very rare.

This civilization, whose characteristics have been briefly mentioned above, has, in Scandinavia, its centre on the Danish islands, especially in Zealand, where the big settlements have been discovered and most of the chance finds also ; only the most recent of the denticulated bone-point types appears, in relatively large numbers, in Jutland. The civilization spread to the north and east over a large part of Southern and Central Sweden, but kept itself principally to the coast region of the Ancylus lake. Many of the ancient implements continued to be used in Sweden long after they had disappeared in Denmark.¹

¹ Concerning the Mullerup civilization in Sweden, see especially : K. Stjerna, "Före hällkisttiden," in *Antikvarisk tidskrift*, vol. xix, 1911 ; S. Lindqvist, "Nordens benålder och en teori om dess stenåldersraser," in *Rig*, 1918.

The Mullerup civilization appears to descend from the bone civilization of the Magdalenian period—compare the barbed harpoons, the socketed bone celts, and the ornamentation of both cultures—but it does not, however, have its closest analogies in Western Europe. We find them in Germany; for instance in Mecklenburg, Pomerania, Brandenburg, and East Prussia many antiquities have been found that coincide in detail with the Danish. One can best consider the South Baltic Mullerup civilization as an eastern, much delayed, development of the Magdalenian, comparable, from a chronological point of view, to the Azilian period.¹

If we turn our attention to the East Baltic territory we find, in the well-known settlement near Kunda in Esthonia, on the coast of the Gulf of Finland, a series of antiquities that bear a general resemblance in form to the Mullerup types.² In both places are bone implements in large quantities, as, for instance, numerous examples of barbed bone points. But a closer scrutiny brings to light fundamental differences between the antiquities. In the Kunda find, many of the most essential Mullerup types are missing, even among the bone points, as, for example, the fish-spears with few barbs, often fashioned of rib bone, which are among the most common types from the Danish settlements. On the other hand, new forms have been added which are exceedingly important, because they give an indication of the culture connections of the Kunda people. One of these types—a peculiar arrow-head with a circular cross-section—is scarce, the others—an arrow-head with a triangular cross-section, and an oblique-edged, pointed implement with a groove for the shaft—are frequently met with. These three types occur in the south, in East Prussia³ for example, where also the pure Mullerup civilization is to be found. Since no finds prior to those of the Kunda civilization have appeared in the ancient Baltic Provinces it is allowable to assume that the Kunda culture of Esthonia originated in the south. It seems now that the Kunda culture was a somewhat later, eastern development of the old Mullerup culture, and that its origin is to be sought in East Prussia and the adjoining regions—perhaps in eastern Germany, Lithuania, and Poland.

A continuation of the Kunda civilization is represented by the large find from Pernau in northern Livonia, the rich material of which, including also Kunda types, contains a series of antiquities from a later period.⁴ Even in the well-known find

¹ On the authority of H. Fairfield Osborne, *Men of the Old Stone Age*, pp. 486 *sqq.*, and of H. Breuil, in *L'Anthropologie*, 1912, pp. 529 *sqq.*, Mr. Peake assumes that the origin of the Mullerup civilization should be sought in Siberia. There are, however, no archæological facts that tend to support such an assumption.

² C. Grewingk, "Geologie und Archæologie des Mergellagers von Kunda in Estland," 1882; *id.*, "Die neolitischen Bewohner von Kunda in Estland," in *Verhandlungen der Gelehrten Estnischen Gesellschaft zu Dorpat*, vol. xii, 1884; Max Ebert, "Die baltischen Provinzen Kurland, Livland, Estland," in *Prähistorische Zeitschrift*, vol. v, 1914, p. 507.

³ In the Museum of Königsberg. In Posen, also, may be found arrow-heads with triangular cross-section; see Koslowski, *op. cit.*, plate i, fig. 10.

⁴ E. Glück, "Ueber neolitische Funde in der Pernau," in *Sitzungsberichte der altertumsforschenden Gesellschaft zu Pernau*, vol. iv, 1906, pp. 259 *sqq.*, and pp. i *sqq.*; Ebert, *op. cit.*, pp. 510 *sqq.*

from Rinnekalns in Livonia, are objects that betray their relationship to antiquities from Kunda.¹ In conclusion, we must mention the relics from the Ladoga Canal for they, too, belong to the same culture.²

It is worth mentioning that the Kunda civilization is represented, though to an inconsiderable degree only, in southern Finland. A bone implement with an oblique edge and with a groove for the shaft, that was found in the parish of Kyrkslätt, west of Helsingfors, bears witness to this fact,³ and gives us reason to believe that the first people came to southern Finland from Esthonia. An interesting find from the parish of St. Andreae in eastern Finland⁴ can, apparently, be referred to the same or a somewhat later period than the tool from Kyrkslätt. In addition to bone implements this find contains, among other things, primitive, slightly ground axes. Similar axes exist in the Baltic Provinces in a group of finds⁵ which seems partly to succeed and partly to run parallel with the Kunda-Pernau civilization. They occur also in Finland, both in Carelia and in the oldest settlements in the southwestern part of the country. The civilization to which these axes belong has in Finland received its name from the region in which they have been most numerous found, the parish of Suomusjärvi. The Suomusjärvi culture, which as we have seen appears on both sides of the Gulf of Finland, can be considered the successor of the Kunda-Pernau bone civilization. It is also probable that the connections between the Baltic provinces and Finland, of which the Kyrkslätt implement is proof, continued during the Suomusjärvi period, and that the development in southern Finland was partly caused by direct influences from the south. The assumption that the culture came to Finland by a circuitous route over Carelia, cannot, however, be entirely denied.⁶

The Suomusjärvi civilization, is, on the other hand, the first stage in a long development that can be followed up on the soil of Finland. It is the predecessor of that civilization which is characterized by earthenware vessels ornamented with

¹ Ebert, *op. cit.*, pp. 507 *sqq.*

² A. Inostranzeff, *L'homme préhistorique de l'âge de la pierre sur les côtes du Lac Ladoga*, 1882; J. Ailio, "Die geographische Entwicklung des Ladogasees in postglazialer Zeit," in *Fennia*, vol. xxxviii, 1915. The Ladoga finds must be considered in connection with the Kunda-Pernau finds, to which they belong; nothing in the archæological material furnishes support for the separation between these finds which Mr. Peake makes on anthropological grounds.

³ A. Europæus, in *Finskt Museum*, 1917, pp. 5 *sq.*

⁴ S. Pälvi, "Ein steinzeitlicher Moorfund," in *Finska Fornminnesföreningens Tidskrift*, vol. xxviii, 1920.

⁵ M. Bolz, "Neolitische Steingeräte aus dem Pernau-Fellinschen Kreise und dessen Umgebung," plates 3-4, in *Sitzungsberichte der altertumsforschenden Gesellschaft zu Pernau*, vol. vii, 1914; *id.*, "Das neolitische Gräberfeld von Kiwisaare in Livland," in *Baltische Studien zur Archäologie und Geschichte*, 1914.

⁶ Concerning these questions, see A. Europæus, "Fornfynd från Esbo och Kyrkslätt," in *Finska Fornminnesföreningens Tidskrift*, vol. xxxii, 1922.

comb impressions.¹ This fact may be substantiated by details concerning the antiquities and the circumstances of their discovery which cannot be here repeated. This civilization, best known in the form peculiar to southern Carelia, commences with the middle of the Neolithic Age, or somewhat earlier, and continues to the end of the Stone Age. The rich ceramic finds, a series of axes, adzes, chisels and other types give to this civilization a character easily identified. In the latter part of the Neolithic Age this culture covers the greater part of Finland and, varying according to locality, spreads far beyond the eastern boundary of the country. According to the opinion nowadays entertained by the majority of the Finlandish archæologists, the originators of this civilization were the forerunners of the Finno-Ugrian peoples.

For the East Baltic civilization we should, accordingly, have the following sequence :—

Bone culture in East Prussia, Kunda, and Kyrkslätt; a partly later development in Ladoga, Pernau, and Rinnekalns. This bone civilization has emerged from the South Baltic Mullerup culture.

Primitive stone culture in Livonia, Esthonia, and southern Finland, probably running parallel and partly being anterior to the later bone culture; this is the so-called Suomusjärvi culture.

Stone culture, characterized by earthenware vessels ornamented with comb-impressions, in the Baltic Provinces and Finland, with subdivisions depending on chronological and local differences, developed by the forerunners of the Finno-Ugrian peoples that, coming from the south, spread around the Gulf of Finland.²

The Mullerup culture is succeeded, in southern Scandinavia, by the flint civilization which is represented by the famous kitchen-middens—the best known is Ertebølle near the Limfjord—and which, in many respects, presents a strong contrast to the Mullerup period.³ Most of the settlements are now located on the sea-coast. The thick refuse layers, consisting mainly of oyster shells, bear witness to the change in the kind of food sought. Hunting and fishing are still, to be sure, the most important methods of securing a living, but the kind of game is somewhat different. Elk

¹ Concerning this civilization, see J. Ailio, *Die steinzeitlichen Wohnplatzfunde in Finland*, 1909; S. Pälvi, "Riukjärven ja Piiskunsalmen kivilautiset asuinpaikat Kaukolassa," pp. 111 sqq., in *Finska Fornminnesföreningens Tidskrift*, xxviii.

² Irrespective of the skeletons from Ladoga which have been reviewed by Inostrantzeff, *op. cit.*, and some fragments from Pernau, there are no skeletons that can with certainty be ascribed to any of the above-mentioned cultures. However, two skulls from Osel, at least one of them brachycephalic, and some defective skeletons from Kivisaare in Livonia, may perhaps be noticed in connection with the East Baltic stone cultures, named above, see: Carl. M. Fürst and Martin Bolz, in *Baltische Studien zur Archæologie und Geschichte*, 1914. The same might possibly be said of a dolichocephalic skull from Voisek in Livonia, near Kivisaare, see Weinberg, in *Sitzungsberichte der Gelehrten Estnischen Gesellschaft*, 1903. The time of the skeletons found in Rinnekalns is not absolutely fixed; the skulls were partly brachycephalic and partly dolichocephalic, see *Verhandlungen der Berliner Gesellschaft für Anthropologie*, 1877, pp. 415 sqq.

³ Concerning the kitchen-middens see especially *Affaldsdynger fra Stenalderen i Danmark*, 1900.

and aurochs have disappeared, and the sea has begun to pay its tribute in seal, in fowl and fish, and finally even in oysters. The antiquities from this period consist largely of new forms. Bone and horn, though still used, have lost their dominant position, and many types, such as harpoons, socketed celts, net-pins, etc., have vanished. Now, flint is the most important material. Triangular hatchets are exceedingly common, and with them may be mentioned the chipped celts. The pygmy flints have almost entirely disappeared, but, on the other hand, the characteristic transverse-edged arrow-head exists in untold numbers. Rough earthenware vessels show that the art of making objects from burnt clay has been mastered, and for the first time a few polished stone axes have come to light.¹

It is of prime importance for the comprehension of the Stone Age in southern Scandinavia to know how this civilization began. The question is, however, a most complicated one, and the interpretation of facts, herein given, cannot claim to be more than a working hypothesis.

Because of the dissimilarities, immediately obvious, between the Mullerup and the kitchen-midden cultures, it has been assumed that the latter represents a race which has superimposed itself on the older people.² If we wish to accept this suggestion, we must show from where the new people have pushed forward to Denmark and north-western Germany. One could mention the flint civilization of the French Campignian, which is almost identical with the Danish kitchen-middens.³ The lack of finds in the intervening regions could be explained by reference to the fact that coast-settlements, like those of the kitchen-middens, were, perhaps, destroyed and wiped out by the North Sea when its coasts became submerged under the water. In conclusion, one could perhaps associate this whole development with the kitchen-midden civilization on the Iberian peninsula. The excavations in Western Europe have, however, yielded but little material on this subject, and the circumstances under consideration have not, as yet, been thoroughly studied.

However, another solution of the question seems more justifiable than that suggested above. The contrast between the Mullerup and the kitchen-midden periods is not so pronounced as it seems at first glance. The settlements have,

¹ C. A. Nordman, in *Aarbøger*, 1918, pp. 137 *sqq.*

² S. Lindqvist, *op. cit.* The anthropological material does not tend to facilitate the solution of the race question. Four or five skulls have been found in Germany, which can with some degree of certainty be ascribed to the Mullerup people—see G. Kossinna, *Die Indogermanen*, 1921, pp. 15 *sqq.*—some of them are dolichocephalic and some brachycephalic. We have also a couple of skulls from the Danish kitchen-middens; the anthropological material from the Danish Stone Age is discussed by H. A. Nielsen in *Aarbøger*, 1906, 1911, and 1916. The dolichocephalic skulls from Stångenäs in Sweden, mentioned by Mr. Peake, do not belong to the kitchen-midden period. It seems, therefore, as though the people of the North in the Stone Age, beginning from the Mullerup period, were, from a somatic point of view, heterogeneous, but further conclusions cannot be drawn until the material has become more plentiful.

³ Salmon, d'Ault du Mesnil, and Capitan, "Le Campignien," in *Revue mensuel d'École d'Anthropologie*, 1898

indeed, been moved nearer the sea, but many and important lake sites continue to exist—Godsted and Vester Ulslev are among the most significant. The barbed bone points and the pygmy flints have, to a great degree, vanished, but occasional examples have been met with at the bottom of some kitchen-middens. The small round scrapers are, as a matter of fact, fewer in numbers than before, but many examples are still known. On the other hand, some of the principal types of the kitchen-middens, as, for instance, the chipped celts and a few triangular hatchets, were found in settlements from the Mullerup period. Even a transverse-edged arrow-head has been unearthed in the Svaerdborg bog, and horn axes have continued in use.¹ It appears most probable from a consideration of all these data that the kitchen-midden civilization of Denmark and north-western Germany is a later development of the old Mullerup culture. In the same direction point the finds from Calbe an der Milde in Altmark, where a layer of Mullerup objects seems to have been covered with a layer of kitchen-midden antiquities. The settled regions have, however, been increased in area and the shore, where the rich oyster-banks tempted, has been taken possession of. According to this opinion the Campignian and other similar types of civilization in the west and south of Europe are parallel forms to, rather than forerunners of, the kitchen-middens of Denmark.

The kitchen-middens, like the Mullerup settlements, belong to a South Scandinavian form of civilization. In Denmark, especially on the islands and in eastern and northern Jutland, are countless sites of this type. With territory belonging to the Danish civilization should be considered, on the one hand, the north German and, on the other, the Swedish-Norwegian zones. In Sweden the kitchen-midden types are limited chiefly to the west coast, from Scania northward; they occur far less frequently in the eastern and interior provinces.² Now, greenstone is often used in the place of flint. The so-called Lihult-type, which has its name from a settlement in Bohuslän, is merely a chipped celt made of greenstone. Farther to the west, in Norway, where only some isolated specimens of real Mullerup types

¹ The connection between the Mullerup and the kitchen-midden cultures is by no means, as Fairfield Osborne, *op. cit.*, p. 486, and with him Mr. Peake, assumes, limited to so great an extent that only "a few of the flint implements (of the former) suggest certain chipped styles observed in the Kjøkken-Møddings."

² The Swedish Stone Age is treated in a series of monographs on the different provinces: G. Ekholm, *Studier i Upplands bebyggelsehistoria, Stenåldern*, 1915; S. Erixon, "Stenåldern i Blekinge," in *Fornvännen* 1913; S. Lindqvist, "Från Nerikes sten och bronsålder," in *Meddelanden från föreningen Örebro luns museum*, vol. v, 1912; N. Lithberg, *Götlands stenålder*, 1914; E. Nygren, "Värmlands stenålder," in *Meddelanden från Värmlands naturhistoriska och fornminnesförening*, vol. xii, 1914; E. Olsson, "Stenåldern i Västmanland, Dalarne och Gästrikland," in *Ymer*, 1917; B. Nerman, "Östergötlands stenålder," in *Meddelanden från Östergötlands fornminnesförening*, 1911; K. S. Sahlström *Om Västergötlands stenåldersbebyggelse*, 1916; N. Åberg, "Kalmar läns stenålder," in *Meddelanden från Kalmar luns fornminnesförening*, vol. vii, 1913. Summaries in K. Stjerna, *op. cit.*; *id.*, "Les groupes de civilisation en Scandinavie à l'époque des sépultures à galerie," in *L'Anthropologie*, 1910; O. Almgren, "De pågående undersökningarna av Sveriges första bebyggelse," in *Fornvännen*, 1914.

have been found, the kitchen-midden culture has also spread itself—partly in flint and partly in greenstone—along the southern and western coasts, and far to the north. Here, the equivalent of the Lihult tool is the Nøstvet celt, so called after a large settlement in the eastern part of Norway.¹ Several characteristics of the later Norwegian Stone Age can be traced back to the Mullerup civilization. An undebatable contrast, founded on ethnological reasons, cannot, however, be made between the pure Nøstvet finds and those also containing antiquities that may have been derived from the Mullerup "Bone Age" types. Gradually the flint and greenstone civilization of the Norwegian Nøstvet period became transformed and a new, local civilization developed that is characterized, in its latest form, by large numbers of slate objects. This is the Norwegian branch of the civilization that one is accustomed to call Arctic, but the assertion that its source should be sought in the north and east, and that its carriers were the Laplanders, seems unsupported.²

It has been pointed out above that the Mullerup types continued in use on the Scandinavian peninsula long after they had disappeared in Denmark. This is true as well of the western part of the peninsula—there is a well-known find from Viste in western Norway—as especially of the eastern part of Sweden. Here is evolved a separate East Swedish settlement civilization which, to a certain degree, builds on a Mullerup foundation but which, particularly in the south, is strongly influenced by the kitchen-midden forms and later by the megalithic civilization.³ In this group flint plays an unimportant rôle and even the Lihult axes spread in a very slight degree only to eastern Sweden. Their place is partially usurped by the Limhamn axes,⁴ which do not spread in large numbers to the west, but which are met with, occasionally, even in the Danish kitchen-middens. With both branches of the peninsular civilization, the Lihult-Nøstvet group with its successors and the East Swedish culture, occur the greenstone axes with circular cross-section, which can be found even among the typical kitchen-midden materials.⁵

The East Swedish settlement civilization appears in its most pronounced form in Gothland, East Gothia, Sudermannia, Uppland, and finally, on Finlandish territory, on the Åland islands.⁶ The dwelling places are located on the coast. Hunting

¹ A. W. Brøgger, *Oser av Nøstvettypen*, 1905.

² For this point of view, see: Th. Petersen, "Meddelelser fra Stenalderen i det Nordenfjeldske Norge," in *Aarbøger*, 1920, pp. 18 *sqq.*; H. Gjessing, *Rogalands stenalder*, 1920; A. Bjørn, "Træk av Søndmørs stenalder," in *Bergens Museums aarbok*, 1919-20, 1921. The opposite opinion is expressed, for example, by A. W. Brøgger, *Den arktiske stenalder i Norge*, 1909.

³ Concerning this, see the previously mentioned Swedish works, and also: O. Almgren, "Några svensk-finska stenåldersproblem," in *Antiquarisk Tidskrift*, vol. xx.

⁴ K. Kjellmark, "En stenåldersboplats i Järavallen vid Limhamn," in *Antiquarisk Tidskrift*, vol. xviii.

⁵ C. A. Nordman, in *Aarbøger*, 1918.

⁶ The finds from the Åland Islands are discussed by J. Ailio, *op. cit.*, vol. i, pp. 90 *sqq.*, vol. ii, pp. 38 *sqq.*, 181 *sqq.*; B. Cederhvarf, "Neolitiska lerfigurer från Åland," in *Finska Fornminnesföreningens Tidskrift*, vol. xxvi.

and fishing constitute the chief means of support, bone and horn implements are still in existence, slate has in many cases become a substitute for bone and flint, and axes are usually manufactured of greenstone. Especially typical is the pottery, which in its general character bears a certain resemblance to the Finlandish ceramic, but is by no means identical with it. It may be that the origin of the East Swedish ceramic can be sought in the earthenware vessels which belong to the later kitchen-middens, but in its final form it can be sharply distinguished from the hypothetical prototype. The megalithic ceramic, concerning which we will speak later, has exercised a strong influence on the pottery of the East Swedish civilization, whose later style with simpler types of vessels, ornamented with holes horizontally arranged and with impressions made by denticulated instruments, differs in a marked degree from the highly developed earthenware of the stone graves.¹

We have, thus far, for the Scandinavian peninsula and Denmark to consider the following civilizations :—

Mullerup civilization : in Denmark, most widely spread on the islands ; in parts of Sweden, and a few finds in Norway.

Kitchen-midden civilization, probably developed from the above : in Denmark, south-western Sweden, and on the south and west coasts of Norway ; often, on the peninsula, transformed into the Lihult-Nøstvet type and having, perhaps, a more marked resemblance to the old Mullerup culture.

East Swedish settlement civilization, perhaps developed from the Mullerup civilization, but possessing elements adopted from the kitchen-midden and, later, even from the megalithic culture.

The Mullerup people, as indicated above, were presumably the successors of the West European Ice Age people. The kitchen-midden folk and the inhabitants of the East Swedish settlements were both, probably, descendants of the Mullerup people which separated and formed two distinct cultures. The author deems it admissible to assume that these peoples, as well as the Lihult-Nøstvet folk, belonged to a pre-Indo-Germanic race.² Another opinion has been expressed by Professor G. Kossinna,³ among others, who claims that the kitchen-midden people were Indo-Germans, while he considers that the Lihult-Nøstvet folk constituted a separate

¹ Mr. Peake considers the East Swedish civilization as precisely identical with the so-called Arctic. It should be mentioned, however, that the former was unknown when the term Arctic was coined ; it differs in many respects from the north Scandinavian Arctic culture. Likewise the Livonian find from Rinnekalns, which Mr. Peake associates with the East Swedish settlements, differs from the latter, in spite of common traits.

² The scanty anthropological material can be interpreted in various ways. So far as the kitchen-middens are concerned, see H. A. Nielsen, in *Aarbøger*, 1911, p. 90, No. 91, and p. 100, No. 238. The few skulls from the Swedish settlements are partly dolichocephalic, partly brachycephalic ; see C. M. Fürst, *Zur Kraniologie der schwedischen Steinzeit*, p. 58, in *K. Svenska Vetenskapsakademiens Handlingar*, N.F., vol. lix, 1912 ; H. J. Grönroos, "Stenåldersskelettfynden vid Jettböle på Åland," in *Finska Läkarsällskapets handlingar*, vol. lv, 1913.

³ G. Kossinna. *Die Indogermanen*, 1921.

branch of the Mullerup descendants which differed, somatically, from the inhabitants of the kitchen-middens. Kossinna believes that the people of the East Swedish settlements were a pre-Finnish race. This supposition, the truth of which cannot be proven, stands and falls with the solution of the question concerning the relation of the kitchen-middens to the cultures on the Scandinavian peninsula. In my opinion, it is not possible to draw a sharp distinction between the kitchen-midden and the Lihult-Nøstvet civilizations, for the most prominent celt-type of the latter is merely a copy in greenstone of the kitchen-midden form, and, in Norway, the Nøstvet and the flint settlements cannot be entirely separated. The position of the finds from the sites in eastern Sweden is more uncertain, though, even in this case, it seems to me that the explanation given above can be more strongly supported than that given by Kossinna. The Limhamn axes, which appear among the kitchen-midden implements, extend eastward over large parts of the East Swedish settlement region; the axes with circular cross-section are common to both groups, and the origin of the East Swedish ceramic may possibly be found on South Scandinavian territory. Finally, Kossinna's opinion that the Finnish ceramic culture is derived from the East Swedish one is, in any case, chronologically absurd.

In the extreme north of the Scandinavian peninsula there is a type of civilization which makes use of slate in the same manner as did the East Swedish settlement culture, but to a still greater degree. Here, in the north, occur new types of antiquities, included among which are large, round-edged picks. Similar forms occur in northern Finland, and the Arctic culture of North Scandinavia, which is to be derived from the East Swedish culture, is also influenced by the Stone Age of northern Finland.

The Scandinavian forms of civilization, which have thus far been discussed, are, according to our conception, derivations one from the other. The problem presents another aspect when we commence the consideration of the megalithic civilization.¹

The large stone graves—dolmens, passage-graves, and stone cists, which, generally speaking, developed from one another in the order named—have no forerunners in the older, northern cultures. With the stone graves appears a whole series of new antiquities of flint, rock, and clay. The megalithic civilization, at the same time, indicates a change in the manner of living of the northern people. Now the people migrate less than formerly, stock-raising and primitive agriculture seem to have become important means of support; barley, wheat and flax were

¹ In regard to the megalithic civilization of Scandinavia, see both previously cited Swedish works and: Sophus Müller, "Flintdolkene i den nordiske Stenalder," in *Nordiske Fortidsminder*, vol. i; *id.*, "Sønderjyllands Stenalder," in *Aarbøger*, 1913; *id.*, "L'âge de la pierre en Slesvig," in *Mémoires*, 1914-15; *id.*, *Stenalderens Kunst*, 1918; C. A. Nordman, "Jaettestuer i Danmark," in *Nordiske Fortidsminder*, vol. ii.; *id.*, "Studier öfver gånggriftkulturen i Danmark," in *Aarbøger*, 1917.

already known. Flint, which was never ground by the kitchen-midden people, is now made into big, finely polished axes, having thin butts at first but later thick butts. The axes were polished even during the transition period between the kitchen-midden age and the dolmen age, in which axes with oval cross-section and almost pointed butt were produced. Large quantities of perforated axe-hammers and other kinds of implements, made from various rocks, and often elaborate and beautiful, fine arrow-heads of flint and at a later time spear-blades and daggers, were very common; and amber ornaments brightened up the garments. The richly decorated ceramic is new. A whole series of styles can be distinguished, from the vessels of the dolmens to the many, varying vessels belonging to the more recent stone graves. The ornamentation of the pottery constitutes the greatest artistic achievement of the South Scandinavian farming folk of the Stone Age, but its possibilities are very limited: it is a geometric, straight-lined design.

The stone graves are, in Scandinavia, most numerous on the Danish islands, in the eastern and northern parts of Jutland, in Scania and on the west coast of Sweden as far as Bohuslän, and even in a portion of West Gothia. On the west coast of Jutland they occur sporadically, in Sweden they spread to some extent beyond their usual boundaries and reach in the east to Öland; and in eastern Norway, even, a few graves have been found. Antiquities from the megalithic civilization are spread over large areas, that border on the territory of the stone graves themselves and stretch still farther to the north. In Sweden they come into contact with the East Swedish civilization, in Norway with the successors of the Nøstvet culture, and these show themselves so strongly influenced by the newer and more highly developed one that one often speaks of a sub-megalithic civilization.

Concerning the question of the derivation of the megalithic civilization, one must take into consideration the fact that the most ancient stone-grave axes, with thin butts, can typologically, through the medium of axes having oval cross-section, be traced back to the unground axes of the kitchen-middens, and that one might, for this reason, consider the stone-grave culture autochthonous. The question, however, is not settled by this argument, for even though the axes with thin butts are purely northern in their final form, their forerunners, the axes with oval cross-section, appear also in the west and south, whence the stone-grave civilization has, according to other indices, come to the north.

The stone graves, as known, exist chiefly in western Europe: the Iberian peninsula, parts of France—as Brittany, for example—Ireland, and certain sections of England are, in addition to southern Scandinavia, centres in which they are common. It is probable that the northern stone graves, through the medium of the corresponding civilization in the British Isles, can be traced from the megalithic region in south-western Europe. It may also be mentioned that there seem to exist some ceramic parallels between Scandinavia and the western Mediterranean. Judging from accessible reproductions, there are found on the Iberian peninsula,

Sardinia, etc., clay vessels that, in technique and design, have much in common with the Scandinavian megalithic pottery.¹

We assume, therefore, that the northern stone grave civilization contains strong elements of a Western European culture which, largely by way of the northern channel, has spread its influence even to Central Europe. Then the question arises whether this western influence also indicates the invasion of the north by a new people. On this point opinions differ still more than in the case of the origin of the stone graves.

As a rule, the stone-grave people are considered the successors of the kitchen-midden folk, and as Indo-Germans belonging to the Northern race. It seems to the author that the hypothesis first formulated by Sophus Müller² can be more firmly supported. Müller refers to the fact that the stone graves are found chiefly in those regions where non-Indo-Germanic peoples lived in early historical ages, and he believes that the graves have come to the north with people of the same race. In reality, it is difficult to understand how the various culture elements, principally the stone graves, could spread northward unless a migration of at least a small number of people occurred. The new tribe did not have to be especially numerous, for the native people could also adopt the new customs and learn to make use of the new types of implements. Accordingly, the people whose remains we find in the stone graves were, provided the conception outlined above is correct, a mixed people with characteristics of the native, probably pre-Indo-Germanic kitchen-midden tribe, and of the new-comers who presumably represented a non-Indo-Germanic folk. But it is difficult to decide how far these strangers, highly developed in culture, though possibly few in numbers, spread themselves. In any case they probably did not migrate beyond the stone-grave region. A fact, deserving notice, ought yet to be mentioned, that the many large amber finds from Northern Jutland³ belong to the earliest stone grave-period, and perhaps, to some extent, to the age just preceding. Thus, amber seems to have been a strong factor leading to the northward migration of the stone-grave people.⁴

A couple of decades ago one considered the later Stone Age of South Scandinavia to be entirely homogeneous, for only the stone graves with their antiquities were known. Thanks to intensive investigations, a distinct civilization with unique burial customs and antiquities has come to light. One has first become acquainted

¹ Müller, in *Aarbøger*, 1913, pp. 292 *sqq.*; *id.*, in *Mémoires*, 1914-15, pp. 92 *sqq.*; Nordman, in *Aarbøger*, 1917, p. 312 *sq.*

² Sophus Müller, in *Aarbøger*, 1913, pp. 252 *sqq.*; *id.*, in *Mémoires* 1914-15, pp. 53 *sqq.*

³ See, for instance, Sophus Müller, in *Aarbøger*, 1917, pp. 151 *sqq.*

⁴ The supposition of Mr. Peake that the people of the stone graves came from Russia is supported by no archaeological fact whatever. The rich anthropological material from the Scandinavian stone graves is treated by G. Retzius, *Crania suecica*, and by Fürst and H. A. Nielsen in the works cited.

with them in Denmark or, to be more precise, in Jutland.¹ The contrast is sharp and indisputable. On the one hand are great stone graves, in which large numbers were buried, generation after generation, and on the other hand small earth graves, designed for one man only. The graves and burial customs, as well as the antiquities, differ. The earth-grave ceramic distinguishes itself from the richly decorated pottery of the stone graves both in form, ornament-technique, and system of design. The oldest vessels are cord-ornamented beakers. Later, the tooth-impression technique was used, and the shape of the vessels was changed, but the style remains far poorer and the range of subjects much narrower than in the case of the megalithic ceramic. On the other hand, in elegance and finish the battle-axes of the single or earth graves can compete with the best-known examples from the megalithic territory, but the forms are not identical.

The oldest single graves in Denmark are located in the southern and interior regions of Jutland. Gradually they spread out over the peninsula, and came into contact with the stone graves on the coasts. The earth-grave civilization laid itself, so to speak, as a new layer over the stone-grave civilization, whose development was interrupted earlier on Jutland than on the islands. For example, it is not unusual to find passage graves whose lowest strata contain antiquities that are typical of the megalithic civilization, while the later layers belong to the earth-grave culture. To some degree, antiquities from the earth-grave culture of Jutland spread over to the Danish islands; a few examples, moreover, have found their way to Sweden and Norway.

The so-called boat-axe culture in Sweden,² however, constitutes a parallel form to the Jutlandish earth-grave civilization. Here, too, we find single graves with handsome battle-axes—the so-called boat-axes—and a ceramic which distinguishes itself from the older Swedish clay vessels, both the stone-grave and the settlement types, but which in technique and in style corresponds to a part of the more recent pottery of Jutland. We have not yet, however, succeeded in discovering one stage which is identical with the oldest Jutlandish, cord-ornamented beakers. The boat-axe civilization expands over nearly all Sweden and, as several finds have shown, comes into contact with the East Swedish settlement culture; the result in the Åland Islands, where this civilization was also represented, was a peculiar development of the ceramic. Stone graves whose old, megalithic antiquities are covered up by types from the earth graves, have been discovered even in Sweden—one among many proofs of the earth graves' vigour in expanding.

The boat-axe civilization does not, however, limit itself to Sweden, but spread from there to Norway, although appearing in a less profuse fashion. The pottery,

¹ Sophus Müller, "De jydskke Enkeltgrave," in *Aarbøger*, 1898.

² On the Swedish boat-axe culture, see the Swedish works cited above, especially K. Stjerna and O. Almgren, and T. J. Arne, "Stenåldersundersökningar IV," in *Fornvännen*, 1909: G. Ekholm, "När kommo svenskarna till Finland," in *Fornvännen*, 1921.

for example, is entirely missing. This civilization is more firmly established in Finland.¹ In the part of Finland, south-west of a line drawn from Fredrikshamn via Tammerfors to Gamla Karleby, have been discovered, from the latter half of the Neolithic Age, large numbers of chance finds, graves, and dwelling-places, with pottery and axes which differ from the native culture. Broadly speaking, the axes coincide with the Swedish boat-axes, the ceramics resemble the older Danish earth-grave pottery, and the graves are similar to the western single graves. It is a civilization which has not sprung from native sources.

We have, accordingly, in Denmark, Sweden and Finland three analogous forms of civilization with battle-axes and common burial customs; and the pottery also, in spite of some mutual differences, has characteristics that indicate a certain affinity. The resemblance between these three types is so strong that it is necessary to seek a common explanation for their approximately simultaneous appearance in the three countries. One is inclined to consider them separate branches of one common root.

It is first necessary to decide whether the appearance of this civilization in the North should be considered as the result of migrations, or of culture influences from other lands.

In Denmark, where the facts are clearest, the contrast between the stone-grave and earth-grave civilizations is very marked, for there is nothing in common between the burial customs, the shape of the graves, and the types of antiquities of the two cultures. When to this we add the fact that the single-grave civilization is undoubtedly related to certain groups of finds in Central Europe, while the equivalent of the stone graves should be sought in Western Europe, and furthermore, that the latter is limited to the coast, while the former reached Denmark by inland routes, one can but assume that the earth graves and the stone graves represent different peoples. This assumption is so certain that it is actually one of the most undebatable points in the whole question of the ethnological conditions of the northern Stone Age.

But one may assert, with an equal degree of assurance, that the boat-axe civilization in Finland represents another people than that of the dwelling-places where the comb-ornamented ceramics have been found. The former has no native forerunner, while the latter, as has been indicated above, builds on a native and East Baltic tradition. The boat-axe civilization has analogies in Sweden, Norway, and Denmark, and in the battle-axe civilization on the Central European mainland. Even the Finlandish boat-axe civilization is originally continental, but it is difficult to decide by which routes it has come to Finland. It is possible that it was by way of East Sweden, from Blekinge northward, and over the Åland Islands. Likewise the point of departure on the German coast is as yet doubtful; ceramic analogies are, however, found in West Prussia, for example. The Swedish boat-axe civilization

¹ The boat-axe culture of Finland is treated by A. Europæus, "Fornfynd från Esbo och Kyrkslätt," in *Finska Fornminnesföreningens Tidskrift*, vol. xxxii.

also seems to have its roots in Central Europe, and Blekinge may have been the province in Sweden where it first gained a foothold.

We consider it, then, settled that the battle-axe or single-grave civilization indicates the appearance of a new people in the North.¹ And it is not merely a question of a military invasion of short duration, for the succession of various types of axes, and the Jutlandish mounds with graves of many generations over one another, etc., prove that we are dealing with an actual migration of people. But the battle-axe people amalgamated with the native population, and many facts show that they became an important, or perhaps the most important, part of the new people that developed from the combination of the various elements during the last period of the Stone Age. Burial customs became uniform, and single graves prevailed now and always after. The relations with the West, of which the stone graves were an expression, drew largely to an end, and in their place arose the relation tending southward, toward Central Europe, whence the earth-grave civilization came; compare, for example, the distribution of a whole series of antiquities from the earliest Bronze Age. The splendid pottery of the stone graves has disappeared, the inferior vessels from the latest Stone Age seem to bear witness to a continuation of the women's work, which was characteristic of the earth graves—both in form and quality they resemble late vessels from the earth graves.

The amalgamation of the various elements occurred principally at the end of the Stone Age; the civilization of the dagger period, or latest Stone Age, was the same in Denmark and in the flint region of the Scandinavian peninsula. The mixed civilization in Finland, for example, bears a somewhat different aspect. Here the earth-grave culture and the native Finlandish civilization met; the result is to be seen in the so-called Kiukais-culture in western Finland, which is distinct from the Scandinavian but has still strong connections with it. When we advance a bit into the Bronze Age the culture of south-western Finland also becomes identical with the Scandinavian.

We have, in the earlier Bronze Age, in all Scandinavia a homogeneous civilization which is generally acknowledged as being Teutonic. It descends directly from the culture of the so-called dagger period, or latest Stone Age, which, as we believe, was the first Teutonic civilization in the North. But the Teutonic people of the dagger period have traits of many tribes, possibly of various races: the people of Mullerup, the kitchen-middens and the East Swedish settlements, which we have called pre-Indo-Germanic, the megalithic people, which, perhaps, was non-

¹ The anthropology of the battle-axe folk is, as yet, totally unknown, no skeletons being found in Scandinavia. A single grave from the neighbourhood of Dorpat in Esthonia contained a skeleton, the skull of which was mesocephalic; see Hausmann, in *Sitzungsberichte der Gelehrten Estnischen Gesellschaft*, 1911, pp. 60 *sqq.* The dolichocephalic skull from Voisek might possibly belong to the same culture; cf. above, p. 31, note 2. This grave contained no antiquities, excepting a flint flake, and similar grave finds occur also in the region of the Jutlandish single-grave culture.

Indo-Germanic, and, finally, the battle-axe people. We have tried to show that the battle-axe people were a very important factor in the formation of the culture and the people of the dagger period. It is not improbable that the battle-axe people constitute the Indo-Germanic element in the people of the latest Stone Age, and, consequently, of the Bronze Age. In this manner, as the result of the wanderings of the Indo-Germans, can be explained the widely separated battle-axe cultures in Europe: those of the Netherlands, Germany, Scandinavia, Finland, the East Baltic Provinces, Fatianovo in Russia, etc.

In conclusion, a few words concerning the conditions in Finland during the Bronze and Iron Ages:—

In the poor Bronze Age of Finland two distinct currents can be noticed, a western and an eastern.¹ The former, which is the more important, is to be found in the southern and western parts of the country. Nearly all the objects found here coincide with finds from Central Sweden, and also the graves are identical. There is no doubt that this similarity in culture indicates similarity also in the people: both in Sweden and south-western Finland the settlements were Teutonic. Occasional finds, principally in the east and the north, belong to another culture. Concerning the people who were the originators of this civilization only hypotheses can be formulated: they were most likely Fenno-Ugrian, or, maybe, Lapponian nomads.

A conception, correct in the main, concerning the expansion of both cultures in Finland, is given by the map of Professor A. M. Tallgren, republished as Fig. 6 by Mr. Peake. It is, however, worth mentioning that the conditions to the south of the Gulf of Finland have a different aspect than in Finland: the Bronze Age in Esthonia and Livonia, as well as in East Prussia, belongs to a south-eastern Baltic form of civilization, which varies in some degree from the Scandinavian.

Mr. Peake makes the not very convincing statement that about 500 B.C. a Siberian form of culture, which originated in the Minoussinsk region, had become dominant both in the Volga basin and in Finland, in the Baltic Provinces and East Prussia, and in a considerable area of Sweden. A closer examination shows that this opinion is based upon a misconception of one of Mr. Tallgren's maps.² Mr. Peake has assumed that all the heterogeneous Bronze Age regions indicated on the map in question belong to a single Siberian culture. It is, however, scarcely necessary to state that neither in Eastern and Central Sweden, nor in western Finland, the Baltic Provinces and East Prussia, has there ever been a dominating Siberian Bronze Age culture.

From the earliest Iron Age of Finland up to the first century A.D. there are practically no finds; our oldest finds belong to the second century. They are found in the south-western part of the country, but gradually the find region widens, the

¹ See A. Hackman, in *Atlas de Finlande*, 1910, vol. ii.

² Fig. 7 in Mr. Peake's article, after A. M. Tallgren, *Collection Tavostine*, Fig. 5.

settlements spread inland.¹ The majority of the objects from the first centuries A.D. are types which are also found in the Baltic Provinces ; they are considered a proof of the immigration of Finnish tribes. This culture, which during the earlier Iron Age prevailed in south-western Finland and the Baltic Provinces, is, however, completely impregnated with East Teutonic elements ; it is, in fact, almost entirely Teutonic. But during the course of centuries it developed on both sides of the Gulf of Finland into an independent Finnish culture. The character, originally Teutonic, of this culture can be explained with reference to the fact that the more primitive Finnish tribes somewhere to the south of the Gulf of Finland received, from a small Teutonic ruling class, that culture which they later developed and modified. Where this occurred is, as yet, uncertain : perhaps in the Baltic Provinces, perhaps more to the south. Recently the possibility has been mentioned,² that the older culture of the Finnish tribes may be represented by the so-called "gorodishtshes" of Central and North-western Russia, and that they, during the last centuries B.C., had immigrated to Esthonia, whence a part of them later continued to Finland ; the settlement of Muhukalns in Livonia may possibly be compared to the Russian "gorodishtshes."³

Of so much we can be assured, that a Finnish immigration took place in the beginning of the Christian era to south-western Finland, and that the Finns, spreading to the east, formed a national, though somewhat barbarian culture. Antiquities that may be considered as imports from Sweden are, on the other hand, rather few, and, with the exception of East Bothnia during the migration period, they cannot be thought of as definite proofs of Swedish colonies on the mainland of Finland. It is, however, possible that small Swedish settlements existed also in other parts of the country. The Teutonic element in Finland's culture, which was so strong during the Bronze Age, has, to a great degree, diminished. The Åland Islands are an exception : here almost all antiquities, as well as the burial customs, are the same as in Central Sweden. Here the population was Swedish.

Toward the end of the Iron Age, we have dense, chiefly Finnish, settlements in the western parts of the mainland of Finland ; a part of the inland country is rather sparsely settled, and in the east a rich Finnish culture flourishes. With the crusades to Finland, and the conversion of the Finnish people during the twelfth and thirteenth centuries, the Swedish elements strongly increased in the south and west.

¹ Concerning the earlier Iron Age in Finland, see A. Hackman, *op. cit.* ; *id.*, *Die ältere Eisenzeit in Finnland*, 1905 ; *id.*, "Svenskbygdernas förhistoria," in *Det svenska Finland*, vol. ii, 1920.

² A. M. Tallgren, in *Sitzungsberichte der gelehrten Estnischen Gesellschaft*, 1912–1920.

³ M. Ebert, in *Prähistorische Zeitschrift*, 1913, pp. 520 sqq.

SOME BALTIC PROBLEMS: A REJOINDER.

By HAROLD PEAKE.

M. NORDMAN has done us a great service by giving us so full an account of the early civilizations of the Baltic region, fortified by such a complete bibliography of the recent literature on the subject. As he justly remarks, the evidence is too scanty to enable us to give a final decision on the anthropological problems involved, but the production from time to time of working hypotheses, as I think he agrees, is not without value.

In dealing with the Mullerup civilization, better known in this country as the Maglemose, he is inclined to trace it from an eastern variety of the Magdalenian, surviving into the Azilian period. As to its date there is little or no variety of opinion. The main argument in favour of its Magdalenian affinities lies in the common use of harpoons, but, as has been shown by various writers, the harpoons of the two cultures are very different in form and material. Another point which may be urged in its favour is the existence of animal motives in the ornament used by both peoples, but, as Breuil has pointed out, a careful study of these remains shows that they cannot be derived from Magdalenian sources. The close resemblance between the Baltic harpoons and those of East Russia, and the complete identity of style between the naturalistic engravings of Scandinavia and the painted and engraved figures from Western and Central Siberia, point to an Asiatic and Siberian origin.¹

Another view very widely held is that the Maglemose culture is derived from a very late form of Aurignacian which survived in South Poland into Magdalenian times. This view has been briefly discussed by Burkitt,² who mentions also the resemblance between the Maglemose harpoons and those found in East Russia. This school of thought seems confident that the Maglemose culture came from the East, which is also, though in a slightly different form, my contention. M. Nordman asserts, somewhat categorically, that there are no archæological facts that tend to support the assumption that the Maglemose culture is connected with

¹ Breuil, l'abbé H., "Les subdivisions du paléolithique supérieur et leur signification," in *C.R. Congr. Internat. d'Anthrop. et d'Arch. préhist.* Genève, 1913, vol. i, pp. 235-6.

² Burkitt, M. C., *Prehistory*. Cambridge, 1921, p. 155.

that of Siberia, but I would ask him to compare the figures given by Kossina,¹ with those given by Aspelin² and those published by Cartailhac and Breuil.³

M. Nordman states that the date of the skeletons of Rinnekaln is uncertain, and that they were partly brachycephalic and partly dolichocephalic. This is strictly true of the upper series, which is probably relatively modern, but the earlier series to which I referred lay deeper, and three at least of the six lay below the undisturbed archæological deposit. Of these six, five, according to Virchow, were brachycephalic and one female dolichocephalic. If the cultures of Rinnekaln and Lake Ladoga are absolutely identical, a question on which I can form no independent judgment, as I have not seen the material from either site, then we must conclude that two populations of different racial types were living alongside one another, using the same or similar culture, which one group had doubtless borrowed from the other.

On the relationship between the Maglemose culture and that of the shell-mounds there are many hypotheses current, as there are as to the origin of the Campignian culture. M. Nordman has given us, in very fair terms, two of these views, and has selected for adoption the one which appears to me, from the evidence he cites, to be the less convincing of the two.

It is news to me that the Stångenäs skulls are not considered as coeval with the shell-mounds. Nilsson says of them, "they were discovered lying about 3 feet below the surface of the bed, and the shells in the bed as well as those above the skeletons were found in horizontal layers in a perfectly undisturbed state."⁴

Though the anthropology of the single-grave folk is unknown from Scandinavian evidence, the culture is that known in Britain as that of the Beaker-folk. All the skeletons associated with this culture, except a few in Aberdeenshire, are of the same type, namely, that known formerly as the Bronze-Age invaders of Britain, or Round-Barrow men, and now as Beaker-men, or Beaker-makers.

I see, on further reference to Tallgren's map, that I have somewhat misunderstood its purport, and that not all of the sites marked were claimed to be exclusively Siberian in culture.

¹ Kossina, G., "Der Ursprung der Urfinnen und der Urindogermanen und ihre Ausbreitung nach dem Osten," *Mannus*, vol. i, 1909, p. 17, pls. i, iv, v, vi, Figs. 16, 17, 18, 19, 20, 21, 22.

² Aspelin, *Antiquités du Nord Finno-Ougrien*, 1877, pp. 75-7, Figs. 339-351.

³ Cartailhac and Breuil, *La caverne d'Altamira à Santillane (Espagne)*, Prince of Monaco Series, 1906-8, p. 148, Fig. 115.

⁴ Nilsson, S, *The Primitive Inhabitants of Scandinavia*. London, 1868, p. 116.

PALÆOLITHIC MAN AT GIBRALTAR: NEW AND OLD FACTS.

By L'ABBÉ H. BREUIL, Litt.D. (Cambridge), Professor at the Institute of Human Palæontology, Paris.

I.—*Discovery of a Mousterian Rock Shelter near Forbes Quarry.*

BEING in the war-service of the Naval Bureau and the French Embassy at Madrid, I was several times employed as diplomatic courier between Madrid and Gibraltar. It was during the short hours of one of these brief sojourns on the Rock, that, to employ my leisure time, I began to examine the foot of the slopes formed by the rocky rubbish of Forbes Quarry, to the north of the citadel.

I had already visited this place in 1914, with the regretted Colonel Willoughby Verner, and had assured myself that the old marine rock-shelter of Forbes Quarry was of no interest, and had never contained deposits other than marine gravels and a layer of stalagmite and clay, with the bones of very small mammals. Even the breccia of Forbes Quarry is no longer *in situ*, on account of a gigantic landslide; the only traces are some scraps of wood, remains of sheds buried by the landslide. Between the quarry (Forbes Quarry) and the point where the road passes at the foot of the formidable vertical peak of Rock-Gun, which rises to the height of 413 metres, there is a deep cleft in the cliff, half filled up with a great mass of rubbish, on a very steep slope. This heap of rubbish is very old, and at the summit measures more than 100 metres in height; a number of shelters and numerous military trenches have been dug in it, which I visited in April, 1919, with Colonel Willoughby Verner, with the permission of the Governor of the fortress, but I noticed no remains of prehistoric age.

The slope of this cone of rubbish, instead of spreading in a normal way over the northern plain, on the contrary falls steeply, presenting inaccessible slopes, except towards the centre, where the erosion has cut out a breach, of which the ascent is very disagreeable and requires much precaution.

In all this mass, partly covered with a short grass towards the top, but of which the more or less agglomerate structure is visible in certain places near the foot, there are no remains of fossils to be seen except a great many terrestrial molluscs, principally *Helix*, which appear to be localised in the most recent layers; they belong to the period after the great landslides, when the slopes were formed, and when vegetation grew there.

To the east of these heaps of rubbish, and forming a counterpart to the quarry (Forbes Quarry), which encroaches on its western side, is another small quarry;

it is about 250 metres distant and behind some sheds, which are the only things between it and the road ; it faces an old signal tower called the Devil Tower, and is at about 150 metres distance from it. The little quarry is almost deserted. It was there I wandered on the 28th April, 1917, in one of my moments of leisure. I noticed on the surface of the groove cut through the rubbish of fallen rock several little pieces of breccia containing fragments of bones ; they were not *in situ* and must have rolled down from higher up the slope ; I climbed up the slope and soon found another handful of similar bones, and fragments of the teeth of deer and horse, evidently fossilized, and I reached thus a minute rock-shelter behind which they were numerous. At this moment a military policeman hailed me from the road, and forced me to interrupt my observations. After an examination of diplomatic passports, and having studied intently the handful of rubbish which I still clutched, he courteously requested me to keep to the road, and left me in peace.

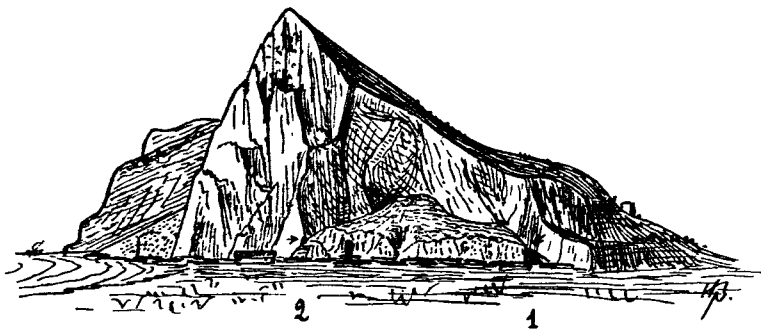


FIG. 1.—SKETCH OF THE NORTH FRONT OF THE ROCK OF GIBRALTAR, WITH THE "BRECCIATED TALUS," BETWEEN FORBES' QUARRY (1) AND THE NEW MOUSTERIAN ROCK-SHELTER (2) OF DEVIL TOWER.

Thanks to the services of Colonel Willoughby Verner, I was able in April, 1919, to continue the examination of this place, the Governor very graciously conceding his permission, and it is of the results of this first short search that I wish to give an account.¹

The very shallow rock-shelter which attracts one's attention 15 metres above the quarry, is a fissure in the rock, the base widening into a little recess. Standing at the back of the rock shelter, and facing the Mediterranean, one notices that the left wall of the shelter (as one leaves it) is continued down to the foot of the hill by a rocky projection, which still remains ; the right-hand limit of the deposit is, on the contrary, undetermined. The thickness of the rubbish in front of the rock-shelter is very great, at least ten metres deep, and I think that this rubbish masks a marine cave (similar to that of Grimaldi) of which only the top end in a cleft remained free

¹ A short article on this subject appeared in the *Gibraltar Chronicle and Official Gazette*, of the issue of May 14th, 1919, under the signature of Colonel Willoughby Verner.

of rubbish ; this must have fallen partly from the great peak which dominates the shelter, and be partly the ruins of the shelter itself, for one can see that the roof was originally much higher.

The top layers, visible in the rock-shelter near the entrance, have small sandy particles mixed with fragments of limestone, small bones, and minute débris of land and sea shells ; the layers are horizontal and can be studied in section on the slope ; on several levels black deposits with fragments of charcoal are to be noted, testifying to human occupation. I had hardly time to examine them and cannot say their age. They form a little hanging terrace, affected by weathering, and certainly date from a time when the slope had not been eaten away at the base, but spread itself widely over the narrow plain, nearly reaching the edge of the sea. The sea level must have risen since those days, and come to bathe the base of the fallen scree, after the hanging horizontal layers of the rock-shelter were laid down. Anxious to know if the archæological and palæontological layers showed any considerable thickness, I attacked the slope five or six metres lower down, cutting transversely to the axis of the rock-shelter. I found the soil consisted of fragments and blocks of rock mingled with calcareous earth, containing in certain places pebbles, sometimes scattered and sometimes conglomerate, in a form of "breccia." It is in this soil, resting on a rather sandier and red-coloured level, that the specimens were collected, principally in a dark layer, ill-defined, but which showed signs of human habitation.

Bones of Mammals. These bones are often whole and belong mostly to young animals, does, kids, young wild boar, and have been dragged there not by man, but by the panther, of which animal there are numerous remains. To the skill of human hunters must be attributed the rare fragments of giant ox and horse, and the bones (broken and burnt) of full-grown herbivores, and also of rabbits, which are common, as in all the Palæolithic layers of Andalusia. The lynx was also responsible for the increase in some of the layers of bones of rabbits and birds. Here is the list of mammals which M. Harlé has made out, verifying and confirming my previous study of them.

Ursus arctos. Some remains.

Felis pardus. Limb bones of adult panthers, rather small.

Felis pardina. Mandible and numerous bones belonging to at least two adult lynxes of small make.

Hyæna striata (?). Coprolites, also fifth left metatarsal, which, though less massive, resembles those of the *Hyæna spelea*, and can be compared to those of the *Hyæna striata*.

Sus scrofa. A boar, at least one adult specimen and two young ones, of which one of the skulls is almost complete.

Cervus elaphus. Common deer of rather small build, at least two adult specimens, one young, and one very young (mandibles and big bones not split by man).

Capra ibex. Numerous remains of at least two adults and one young one.

Large ox. Adult and also very young specimens (few fragments), isolated teeth, astragalus, calcaneum.

Equus caballus. An upper molar, a fragment of a phalange.

Talpa sp. A small species, although adult, perhaps resembling more the *Talpa cæca*, a more southern type than the *Talpa europea*.

Lepus cuniculus. Rabbit, very abundant, some of the bones have been broken by man and burnt.

Arvicola sp. Small type ; mandible.

M. Harlé drew my attention to the fact that the bear, the panther, the lynx, the deer, the ibex, and the mole were all considerably smaller than the types found in the south of France.

Bones of Birds. There are a great many bones of birds, often of considerable size, in the tufa ; their fragile consistency makes it difficult to extract them whole, except for the small kinds.

Mr. E. T. Newton kindly consented to identify these bones. (Extract of Mr. Newton's Report follows.)

" Fossil Avian Bones from a tufaceous deposit at Gibraltar, near Forbes Quarry, obtained by M. l'Abbé Breuil and Colonel Willoughby Verner and sent to E. T. Newton for identification on 3rd February, 1921.

" A number of birds' bones obtained by M. l'Abbé Breuil and Colonel Willoughby Verner from a tufaceous deposit near to Forbes Quarry were sent to me for identification, and are of interest inasmuch as they add to our knowledge of the ancient fauna of this southern point of Spain. When these remains reached me they were in a fragmentary and fragile condition, and largely covered by tufaceous deposit. After cleaning and hardening, many of the pieces could be fitted together and portions of large bones partly restored. The most striking features of this series of fossil remains are a number of pieces belonging to Vultures, and more than a hundred small bones of the Alpine Swift. All the species identified are living forms.

" *Vultur monachus*, Linn. Several portions of large humeri, ulnæ, a metatarsal, and other parts of the skeleton agree with the corresponding parts of this species. These bones represent not fewer than three individuals. The distal ends of five ulnæ have each a deep pneumatic depression near its extremity, in which are the pneumatic foramina. Although present in each of these bones, this depression seems not to be a constant character of the species ; for two skeletons in the Natural History Museum at South Kensington differ, one possessing similar depressions and the other not.

" Eagle (*Haliæetus sp.*) To this genus is referred a portion of a sternum showing the two articulations for the coracoids overlapping in the mid-line. I have not found this condition in either *Vultur* or *Aquila*.—Eagle (?) A fragment of the distal

end of metatarsal bone, much smaller than *Vultur*, is like that of *Aquila* and less like that of *Haliaetus*.

"Brown Owl (*Syrnium aluco*, Linn.). The distal third of an ulna, which in size and form agrees with this bone in the Brown Owl, is referred to this species. It is unlike that of the Eared Owl or Barn Owl.

"Merlin (*Falco aesalon*, Tunstall). Half a tibia showing the peculiar arrangement of the tendon ridge, agrees precisely with that of the Merlin and not so well with that in the Kestrel. Also two humeri, one nearly perfect, are almost certainly of the same species.

"Kestrel (*Falco tinnunculus*, Linn.). A humerus wanting the head, and part of a metatarsal seem most near to the Kestrel.

"Swallow (*Hirundo rustica*, Linn.). A perfect humerus, undoubtedly represents the Swallow.

"Starling (*Sturnus vulgaris*, Linn.). A complete humerus more slender than that of the Thrush, agrees with that of the Starling.

"Common Chough? (*Pyrrhocorax alpinus* (?)). Half an ulna smaller than that of the Common Chough is doubtfully regarded as the Alpine form.

"Alpine Swift (*Cypselus melba*, Linn.). The remains of a large Swift are very abundant in this series of fossil bones, there being about one hundred ulnæ and sixteen metacarpals. There is also a perfect metatarsal. The chief wing bones of the Swifts are so peculiar that there is little likelihood of their being mistaken for any other bird. The ulnæ are remarkably straight and robust, with peculiar articulations; and such are these fossil ulnæ from Gibraltar, they have all the peculiarities presented by our Common Swift (*Cypselus apus*) but are longer and stouter, and indicate a much larger bird. Unfortunately no skeleton of the large Alpine Swift (*C. melba*) was available for comparison, but by the courtesy of the Natural History Museum at South Kensington I was allowed to uncover the arm bones of a skin of this species, and found they were identical in form with the fossil bones; the articulations, however, could not be clearly seen. But now I have been able to compare with a recent skeleton, most obligingly lent by the Abbé Breuil, and the identity of the recent and fossil bones is rendered doubly sure. The fossil ulnæ vary in size from 23.9 mm. long by 2.8 mm. wide to 27.3 mm. long by 3.2 mm. wide. The ulna of the recent skeleton is 25.4 mm. long by 3.1 mm. wide. Other species of *Cypselus* (*C. maximus* O. Grant, from Ruwenzori) have been described, but there is no reason to think that their bones would be materially larger than those of the Alpine form. The fossil metacarpals are imperfect, but they resemble the recent form, and I have no hesitation in including them in this species, and the metatarsal no doubt belongs to the same, its length is 14.2 mm. and the distal width 4.0 mm. The Alpine Swift was first described in 1741 from a Gibraltar specimen, where the species was said to occur in thousands. (See Garrod, *British Birds*, iv ed., Vol. II, p. 375.)

"Barnacle Goose ? (*Bernicla leucopsis* (?) Bechsh.). The distal half of an anserine metacarpal agrees in form with that of a White-fronted Goose, but is smaller and in this respect compares better with the Barnacle Goose.

"Rock Dove (*Columba livia*, Bonnat). Portions of seven humeri, one nearly perfect, together with ulnæ and coracoids, compare better with the bones of the Rock Dove than with other species of *Columba*.

"Red-legged Partridge (*Caccabis rufa*, Linn). This species is represented by portions of three femurs, an ulna, a scapula and a coracoid.

"Lapwing (*Vanellus vulgaris*, Bechsh.). The distal half of a humerus is the only bone referable to this species.

"All the species represented by these fossil bones are forms living at the present day at no great distance from the locality where the fossils were found, and consequently afford no clue as to the age of the deposit in which they occurred."

I notice amongst the specified birds numbers of ordinary rock-dwellers, as the Sea-eagle, Falcons, Eagles, Owls, Choughs, as well as Swifts, Swallows and Rock Doves. But the great black Vulture which is extremely rare to-day in Andalusia,¹ and which nests in big trees and not in rocks, was then more common than it is to-day, and the presence of its bones would lead one to suppose that the Rock was then partially covered with forests. Since it does not nest in rocks it is more difficult to account for its presence here, but perhaps it came to the corpses which the panther abandoned, and the panther may have killed the birds as an amusement. As for the Barnacle Goose, the Plover, and the Red-legged Partridge, it was probably the lynx which devoured them.

Reptiles and Batrachians. Some remains of tortoises and big toads.

Shells. These have been classed by M. Paul Fischer, who published the result in the *Journal de Conchyliologie*, 1920, p. 389. The sea shells have been brought by man and have served for his food. •

Mytilus gallo provincialis, Lam. The thick and brilliant nacre of the Gibraltar specimens resembles an exclusively Atlantic species *Mytilus afer* of western Morocco, which does not exist at Gibraltar. The mussels were of great size and fairly plentiful in the tufa, but were as a rule difficult to excavate on account of their fragility.

Patella vulgata, L. Show the shape and markings generally to be found in the Atlantic type or in those found in Britain. There are numerous specimens.

(?) *Meretrix chione*, L. Fragments.

The terrestrial shells are there in their natural state; they are most frequent in the surface layers of the scree and in the tufa, but from the latter they are difficult to extract.

Helix (Otola) marmorata, Fer. and *Helix balearica*, Zieg., with intermediary forms showing once more that instead of considering these as two species they can be treated under one heading.

¹ *My Life among the Wild Birds of Spain*, Chapter V, Willoughby Verner.

Rumina decollata, L. A variety.—These species are still in existence in the district.

Industries and other human remains. The presence of man is first shown by the traces of hearths, burnt bones, and calcined stones scattered in the layers, but up till now stone implements are scarce. Except for ten shapeless flakes of flint, quartzite or hard limestone, we can only base our morphological theories on four objects: (1) a superb flint side scraper with a marked white patina (Fig. 2, 1), the flake surface very curved and perfectly retouched. It is exactly like the side scrapers of La Quina and Le Moustier; (2) A quartzite disc, greyish-brown in colour (Fig. 2, 2) and a blade of the same material (Fig. 2, 3), thick and with a broken end and some notches made by use on the right edge; (3) another blade of flint, thinner, of the same material, but as irregular as the preceding one; the two outside edges are

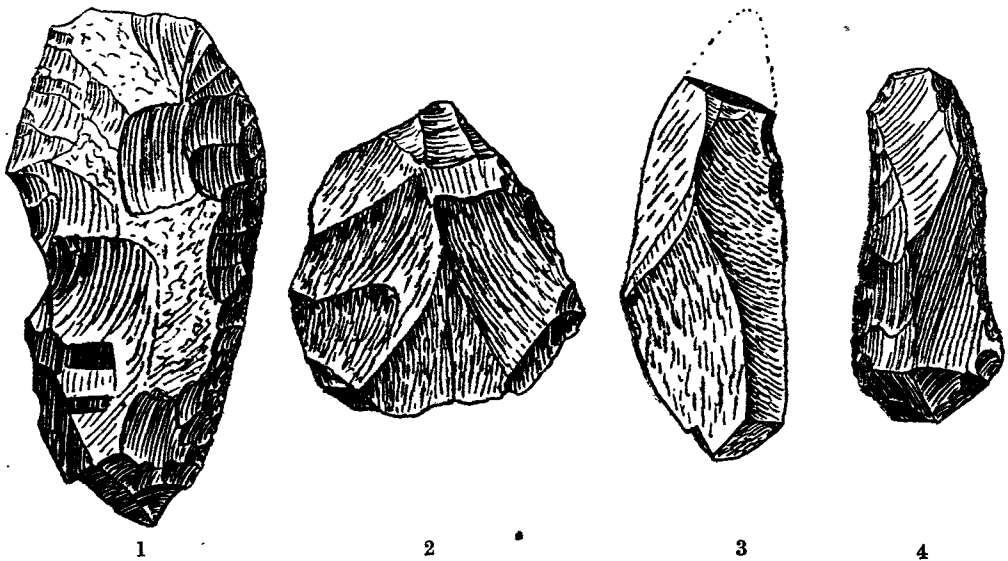


FIG. 2.—MOUSTERIAN IMPLEMENTS OF THE NEW ROCK-SHELTER: 1 AND 4 ARE OF FLINT, 2 AND 3 OF QUARTZITE. $\frac{3}{4}$.

carefully notched (Fig. 2, 4). The make of these two blades show them to be purely Mousterian. The character of these four specimens shows them to be of Upper Mousterian age. I found no trace of worked or utilized bone.¹

To all appearance the continuation of the excavations on this level, as they approached the floor of the rock-shelter, will expose the centre of the "hearths," of which only the outside edge is projected.

A thorough search would involve much excavation, starting with the upper layers which I left undisturbed, and it might be that in the mass of debris, 10 metres thick, older layers than those which I broke into may be discovered.

¹ I examined, at Cambridge, thanks to the kindness of Professor Duckworth, the flints of which he speaks on p. 561 of his article, "Cave Exploration at Gibraltar in September, 1910." (*Journal of Royal Anthropological Institute*, 1911), and, contrary to the opinion of Dr. Sturge, I think none are of earlier than neolithic date.

The Quaternary age of those I examined is undeniable, as also that of the contained industries of Mousterian date.¹

It is needless to insist further on the importance of these affirmations when one remembers the additional evidence given by the discovery, in 1848, by Lieut. Flint, of a Neandertaloid skull in Forbes Quarry. The great number of bones of panther, lynx, and vulture, the immaturity of many of the collected skeletons, and the fact that in their original state the bones were so little fractured, seems to show that man played but a small part in their accumulation, and that one is dealing with a lair of carnivorous beasts, though man also frequented the neighbourhood.

II.—*Documents Dealing with the Old Excavations at Gibraltar.*

I think it is interesting to note that the Abbé Gaudefroy, Professor of Mineralogy at the Catholic Institute, gave me last year two documents (old manuscripts) dealing with the excavation of the Gibraltar Rock shelters by Captain Brome,² one written in Spanish and the other in English. The latter is an account of diggings made by the Captain between 1864–68, earlier than those the account of which is published by Busk; he tells of the results of excavations in a cleft to the east of Genista Cave, containing the bones of rhinoceros, of a very large deer, etc. This fissure was connected with Genista Cave, and according to him may have been the way the bones were brought in. I will return to this subject later. He then recounts the more recent discoveries made in other rock shelters on the Rock, either in the neighbourhood of Genista Cave, Martin's Cave (neolithic and mediæval), Fig-tree Cave (same), St. Michael's Cave (same). Then he told of the discovery of subterranean galleries leading from the preceding cave, which he called "Leonora's Cave," in which he only makes mention of the beautiful stalactites. I visited these galleries in 1914 without finding anything of interest, except a few rubbed-out remains of yellow paintings, absolutely indecipherable.

¹ The Mousterian civilization had reached the same stage as in the neighbouring Andalusian region. The nearest stations are those of Pasada of Gibraltar, near Casas Viejas (Cadiz), Cerrito de la Campanilla near Acizcar at Facinas (Cadiz), different isolated finds of Facinas itself and Taivilla and Bolonia (Cadiz). At a little distance we can mention the great open-air workshop at Bobadilla (Malaga), and much farther away, the rock shelter excavated by L. Siret, in the province of Almeria (the caves of Zajara and las Perneras), and in the province of Murcia Palomarico at Mazarron, and la Vermeja at Carthagenæ. I myself found a big Mousterian workshop at Minateda (Albacete). Only the stations discovered by L. Siret can boast a beautiful industry comparable to that of Dordogne and Charente.

² These accounts confirm, on various points, the far more detailed report of G. Busk (on the cave of Gibraltar, in which human remains and works of art have been found) read at an International Congress of Prehistoric Archaeology at Norwich in 1868, p. 106–166; an account of the Judge's cave (p. 144–9), actually on the property of Mr. James L. Imossi, which I visited with Colonel W. Verner in 1919, and of which the original entrance is blocked with earth and rubbish, and which should have an exit in the neighbouring ravine of Buena Vista. I noticed some fragments of rough pottery and some animals' bones of probable neolithic age.

The second document, in Spanish, is not signed ; it is entitled " Copy of some observations on the collection of fossils in the caves Genista, Martin, etc., at Gibraltar, in the possession of the Bishop of Antinoë." This report says that Captain Brome gave to this prelate an important collection coming from the Genista Cave, annotated in his handwriting, and there is also mention made of a note by the same author, attached by the excavator to the fossils preserved in the college of San Bernardo at Gibraltar.¹

The stratigraphy of the rock shelter is thus described.

1. The first bones were discovered at a depth of 23 feet ; from 23 to 30 feet various fossils were found, with bivalve marine shells (*armejas*) of various kinds.

2. From 30 to 38 feet, limestone, quartz pebbles (*guijarros*) and earth. From 38 to 50 feet red breccia, the teeth of rhinoceros, bones of ruminants, birds, rolled quartz pebbles, *flints*.

3. From 53 to 59 feet, the bone-strewn breccia continues ; a human milk tooth, some flint implements, of which one is a knife.

4. From 69 to 100 feet the bony breccia continues with scattered bones, teeth, and quartz pebbles.

The unknown author of this article discussed afterwards some of the discovered facts. He did not admit that man existed at the time of the formation of the breccia in Genista Cave ; questioned the human working of the shaped flints, and thought the character of the Forbes Quarry skull purely accidental. In all these points he seems badly inspired. He probably was so, even as regards the criticism of the explanation given by Busk and Falconer of the accidental introduction of such a mass of bones into the cave, but he himself expresses no opinion.

He is quite right in thinking that it is not the force of gravity which mixed in the breccia so many bones of animals, creatures which naturally died outside the cave, remains which include fish, sea shells, and the bones of birds. The most probable conclusion is that the greater part of these bones was brought there by carnivorous beasts, by man, and as regards the smallest, by great birds of prey.

Genista Cave, with flints, travelled pebbles, bony breccia, is therefore a deposit representing a haunt of beasts of prey, and a human palæolithic station, the existence of which was unknown at the date of the excavations. It would be interesting if we could find again the flints mentioned in the catalogue, and the human milk tooth from the red breccia.²

¹ In the work of Busk (Norwich) the stratigraphy is less clearly set forth ; but in the 53-foot deep layer mention is made of the discovery in the red breccia of two rhinoceros molars, of a flint knife, and of numerous flakes of very large size. There was also a human milk tooth, not worn. In the top layers, which have a thickness of 20 feet, formed also of red breccia, they were beginning to discover flints, rolled pebbles, and bones. These two documents (Busk and that written in Spanish) agree so closely that they are evidently based on the work of Captain Brome.

² I desire to give hearty thanks to my friend Miles Burkitt for translating my French manuscript into English.—H. B.

CARVED MONOLITHS AT DIMAPUR AND AN ANGAMI NAGA CEREMONY.

By J. H. HUTTON.

[WITH PLATES I-IV.]

THE erection of forked posts as a memorial of feasts is still practised by several tribes in Assam, and is in some cases accompanied by the erection of round posts notched. Thus the Garos use a Y-shaped post, to which they "tether bulls before sacrifice in their death ceremonies," and round ones as memorials to their dead (*vide* Col. A. Playfair, *The Garos*, pp. 16, 17). These Y-shaped posts are also put up by the Semas, who likewise tether *mithan* to them before sacrifice, the post remaining as a memorial of the slaughter and feast, though by no means limited to death ceremonies (Pl. IV, Fig. 2). The Southern Sangtams of Primi, Phozami, and the neighbouring villages, which adjoin the western boundary of Burma, also use Y-shaped posts in the same way (Fig. 1), and so, too, the Naked Rengmas, a little further west, though their relations, the Rengmas proper, set up monoliths as memorials instead. In the Lhota tribe, adjoining the Rengmas proper, stones are normally set up as monuments, but Y-shaped posts are sometimes substituted if no suitable stone available for dragging or carrying to the village can be found, and in Yekhum village there is a clan which is not allowed to set up stones at all, but must use Y-shaped wooden posts instead¹ (Pl. IV, Fig. 1).

North of the Lhotas, the Ao Nagas not only use a post split at the top like a Y, but also a round post cut into notches, like the Garo *kima*, or swelling at the top like the cylindrical monoliths at Dimapur (Pl. II, Figs. 3, 4; Pl. III, Fig. 1). The arms of the Ao Y-shaped posts, however, are made to resemble hornbill feathers, not *mithan* horns as in the other cases.² The Khawtlang sept of the Haokip clan of Thado Kukis also uses Y-shaped posts (*vide* Col. J. Shakespear, *The Lushei-Kuki Clans*, p. 65), and so, too, the Wa in Burma (*Gazetteer of Upper Burma and the Shan States*, Part I, vol. i, p. 505). Finally the ruins at Dimapur, in the Dhansiri valley at the foot of the Naga Hills, which was originally the headquarters of the Kachari

¹ I am indebted for this piece of information to Mr. J. P. Mills, whose monograph on the Lhota Nagas is to be published shortly. He states that the reason given for the prohibition is that this clan is of alien origin, and has never been allowed to handle, or carry when migrating, the sacred stones of the village.

² A rough Y is, however, used when common cattle, not *mithan*, are sacrificed.

kingdom, contain enormous megaliths, some round and with domed tops, others squared and Y-shaped (Pl. I, II).¹

Now with the possible exception of the Khawtlang Thados, who, however, may well have absorbed some indigenous tribe in the course of their migrations, a very common Kuki practice, it seems likely that an element of Bodo origin is to be traced in all the Assam tribes using these Y-shaped posts. The Dimasa of the Dhansiri (*Dima*) valley are themselves a branch of the Bodo race, and the affinity of the Garos to the Bodo is generally admitted. The Semas again seem to have definite affinities with the Dimasa. It is pretty clear that they came into their present country from the south, from the country now occupied by the Khoirao villages, some of which show decided Sema affinities. The Khoirao language is classed by Sir G. Grierson as Naga-Bodo, and the Khoirao claim an origin from the

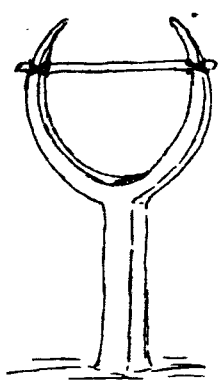


FIG. 1.—WOODEN POSTS OBSERVED IN MARCH, 1922, IN SOME TRANSFRONTIER SANGTAM VILLAGES HITHERTO UNVISITED BY ANY WHITE MAN.

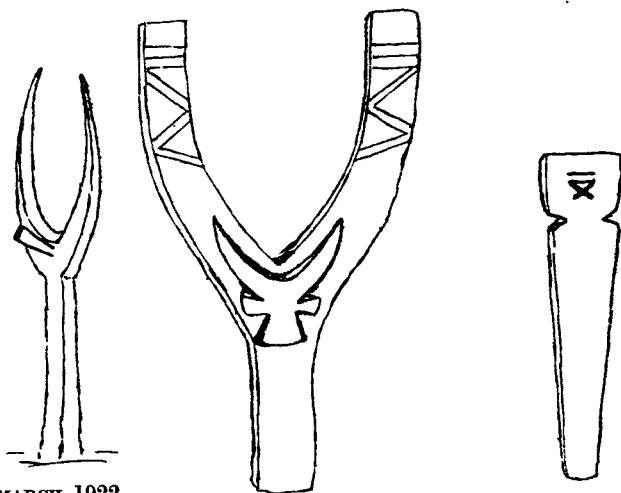


FIG. 2.—POSTS USED BY THE ANGAMIS OF KÖHIMA VILLAGE IN THE *lisi genna*.

west, *i.e.* from the Dhansiri valley or somewhere west of that, and from a god Deamo (? *Dima*, The Great River).² The sept in Yekhum that must erect wooden posts came from the country to the east, and was probably an offshoot of the Sema tribe, but the Lhotas generally have a considerable element which migrated into their present country from the plains of Assam to the west of them, and which, like the Dimasa and the Garos, came originally from the north bank of the Brahmaputra.

The Southern Sangtams, who came from the Chindwin valley and the Wa in Burma, cannot, perhaps, be directly connected with the Bodo, but if, as has been

¹ There is at Maibong, the subsequent capital of the Kachari kingdom after the fall of Dimapur, a well-known monolithic temple, a small building hollowed out of a single huge block of stone.

² The Kacharis, or, at any rate, the Dimasa tribe of them, particularly venerate running water and big rivers. *Vide* Endle, *The Kacharis*, pp. 34, 35.

suggested,¹ the Bodo and the Mon-Khmer races have in Assam been more or less fused, then these tribes might be scions of the fused stock, traces of the Mon-Khmer stock being found from the Central Provinces of India to Cambodia (cf. *Census of India*, 1911, *loc. cit.*, paras. 412, 431). Or, on the other hand, the erection of forked posts in wood and stone might, of course, equally well be in all cases due to the Austric (Mon-Khmer) element in the fused races.

The *provenance*, however, of the use of these Y-shaped and cylindrical erections does not immediately concern the meaning attached to them in use, and this at present varies with different tribes. Among the Garos both the cylindrical and the Y-shaped forms are used as memorials to the dead (*vide* Playfair, *The Garos*, p. 17). Among the Aos both forms are used as memorials to feasts, and in this connection it is to be observed that whereas other tribes tie their *mithan* before sacrifice to the forked posts, the Aos tie them to round or square-headed posts with a hole through the head, though both cylindrical and forked posts are set up to commemorate the feast given² (Pl. III, Fig. 1).

The Garos, the Semas, the Sangtams, and the Khawtlang Thados tie their *mithan* for sacrifice to a forked post, and the Semas and Sangtams at any rate do not make use of a round post at all. At Dimapur both round and forked forms are found in stone, cut each from one enormous block, but the purpose with which they were erected is a matter for speculation. The Kachari kings of Dimapur, driven thence in A.D. 1536, have left no written record (Pl. I, II).

So far the Angami tribe has not been mentioned, but it is from one of their ceremonies that the true significance of these erections is to be determined. Now the Angami tribe, generally speaking, came from the south, and is of a less Mongolian type than the Semas and other tribes to the north, but the big Angami village of Kohima contains at least one clan which claims descent from immigrants from the west, that is, from the direction of Dimapur and the Dhansiri valley; and in Kohima village, and possibly in one or two other villages dominated by Kohima culture, is performed the *Lisü* ceremony, in which wooden posts (Fig. 2, Pl. III, 2) are used in a way not now in fashion in the other villages of the tribe.

Among the Aos, Semas, Sangtams, and Naked Rengmas the posts set up, whether straight or forked, are connected with the sacrifice of *mithan* or with other feasts which can only be performed when the giver of the feast enjoys exceptional prosperity, as the expenses of such feasts in rice and cattle are very heavy. Thus the post symbols are associated, even if indirectly, with the fertility of crops and cattle. In the case of the Angami, however, the connection is clear and direct. The *Lisü genna* is performed by prosperous individuals as the highest but one of the ladder of ceremonies by which social status is acquired. Each ceremony requires greater

¹ *Census of India*, 1911, I, i, ch. ix, para. 416.

² The round posts sometimes have three projections at the top, shaped like hornbill's heads. Rough Y posts are used for cattle at an inferior ceremony, but not for *mithan*.

expenditure in paddy and cattle than the one before, while it adds to the standing of the performer, who becomes entitled to display certain outward and visible signs of his high position, and is also placed under certain restrictions as to conduct and diet. The necessity for restrictions of this sort is obvious, since were it not for them the infection of the village with the prosperity of the individual, which is attempted by the performance of the *Lisü genna*, might involve its contamination with some less desirable contagion. It is by means of two wooden posts, one forked, the other straight, that this infection of prosperity is communicated to the village as a whole.¹ The emblems are prepared outside the village, and on the occasion of the ceremony are carried into and all about it with much pomp and circumstance, and frequent halts for leaping, dancing, and athletic display. The forked post is carved like a Sema Y-shaped post, with a *mithan's* head and also with zigzag ornamental lines, the other is more or less square-topped, as is often the post to which the Ao ties his *mithan* for sacrifice. The forked post is specifically stated to represent the female organs of generation and the other one the male. It may not unreasonably be concluded that the significance of these emblems when found elsewhere in the

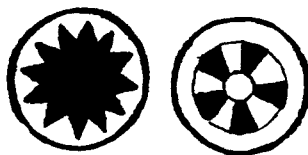


FIG. 3.—REPRESENTATIONS OF THE MOON IN ANGAMI ART, CARVED, AND COLOURED BLACK AND WHITE, ON THE BARGE-BOARDS OF HOUSES. COMPARE THE CARVINGS ON DIMAPUR MONOLITHS (PL. I).

same region is the same as it is in Kohima village, though at any rate in the case of the other Naga tribes this significance seems to have been forgotten, and to have faded to a mere association between the erection of the emblems and the prosperity of the individual, which entitles him to set them up, so that the post to which the sacrificial *mithan* is tied has become a mere memorial of the feast which follows.²

Among the stone pillars and Y-shaped monoliths at Dimapur, a distinct evolution of shape may be traced. In the older monuments the cylindrical pillar is taller and narrower in proportion to its girth, while the dome at the top is also higher in proportion to its circumference. In the later ones the girth increases and the dome is somewhat flatter and more mushroom-like. In the Y-shaped monoliths the

¹ In *The Angami Nagas* I have said, rather misleadingly, that these "wooden figures," drawn through the village at the *Lisü genna*, represent the man who is performing the ceremony and his wife. In a sense perhaps they do, but their shape is that of the sexual organs, not that of the human body) *vide The Angami Nagas*, pp. 231, 232).

² Regarding the Ao practice of tethering their sacrificial *mithan* to a square-headed instead of a forked post, it may be noted that the Sema credits the Ao with calling his father when in distress in distinction from other Naga tribes who call on their mothers, as the Sema himself always does when *in extremis*.

change is more marked. The arms of the older ones are curved inwards as well as backwards at the top, having a swelling on the inside of each arm of the Y, apparently intended to bridge the gap between them. None of these older monoliths are intact, but from what remains the general effect must have been rather that of an oval aperture in a slightly convex surface than of a Y (Pl. I, Figs. 1 and 2). In the later ones the arms are flat and straight without much divergence, in which they resemble the Lhota posts (Pl. I, Fig. 3). In one small monolith, which from the state of its preservation is perhaps the latest, the arms of the Y are, as in most Sema

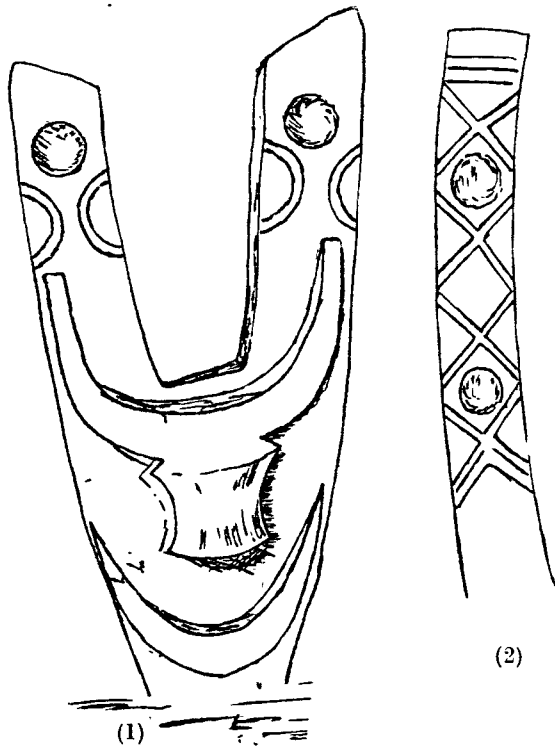


FIG. 4.—(1) SEMA FORKED POST (ABOUT 12 FEET HIGH), SHOWING ORNAMENTATION OF "MOONS."
(2) ARM OF SEMA FORKED POST, ORNAMENTED WITH "MOONS."

posts, markedly divergent. As, however, there appear to be artificial slots in the skyward surface of the ends of the arms in these later Y's, it is possible that the top was closed with a crosspiece cut out separately, though if this be so it is curious that none of these should have survived.¹ The earlier bifurcated monoliths seem to have been carved on the front only, the later on all sides. Among carvings of various subjects, elephants, deer, peacocks, tigers attacking elephants, etc., circular

¹ Perhaps the slots were to contain blood or fat poured on the stone. Cf. Sir J. Frazer, *Folk Lore in the Old Testament*, vol. ii, p. 77.

representations of what is probably the sun or moon are conspicuous, and I have seen many Sema Y posts adorned with a similar, if vastly simpler, pattern; while one that is almost identical, and is said to represent the moon,¹ may be seen on the barge-boards of a house in Kohima village. Of the cylindrical monoliths at Dimapur, one, the biggest by a good deal, differs in shape from the rest, being carved superficially only and having a sort of knob on top (Pl. I, Fig. 4). The rest are deeply cut into a design very suggestive of the Sema design, known as "enemies' teeth" (*aghuhu*), which is met with both on the Y posts and on the frontal posts of houses, and which in its simpler form may be described as two heraldic "labels" back to back (Fig. 5, Pl. II, Figs. 1 and 2).

The nearest place from which the stone for the Dimapur megaliths could have been obtained is the gorge of the Diphu river, a good ten miles away.

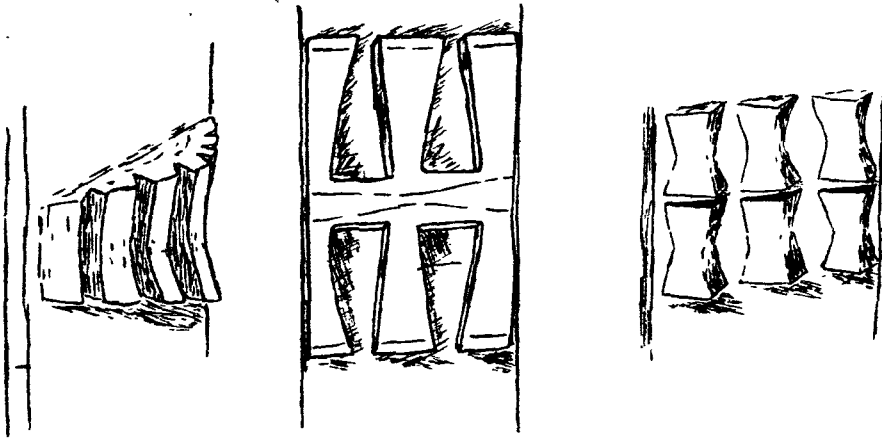


FIG. 5.—DIFFERENT METHODS OF CUTTING THE FIGURE KNOWN AS *aghuhu* ON KING-POSTS BY SEMAS. COMPARE WITH CARVINGS ON CYLINDRICAL MONOLITHS AT DIMAPUR (PL. II, FIGS. 1 AND 2).

As the full details of the *Lisü genna*, at which the Angamis make these phallic emblems, has not hitherto been recorded, and my reference to it in *The Angami Nagas* is misleading, I have recorded the complete ceremony in detail. This record was taken down from the joint account of two old men of Kohima village, Lhosele of the Puchatsuma clan, and Saniyu of the Dapfetsuma clan, who were selected for me as the two men in the village most expert in this ceremony. For this *genna* is not, as most *gennas* are, dictated by the official priest (*pitsü*), but is observed according to the direction of any old man who is well known to be expert in the details that have to be observed. I have myself witnessed what I could of the ceremony, but it would obviously be difficult to be present throughout.

First of all a preliminary ceremony, called *Zhuhetsü*, is performed in the month *thenia-krü*, beginning on the sixteenth day of it. The first day of this observance,

¹ The discs on the Sema Y's are also said to represent the moon.

is called *kizhe*. Rice and liquor are fastened to the centre post of the house, as in all Angami *gennas*, for the spirits, and the performer of the ceremony observes *penna* (i.e. he must not go to the fields to work). He kills four cows or about that number, and feasts his personal friends on this meat and on liquor got ready beforehand. Three new pots must be used, one for male and one for female friends, and the third for the performer and his *thugiyu*. Three new hearths are also made, two in the outer room, the other in the inner room, but away from the household hearth. The male guests cook at one of the hearths in the front room, the female guests at the other. At the third new hearth the performer and his *thugiyu* are to cook. Only the performer's own household, himself excluded, are allowed to use the regular hearth on this occasion.

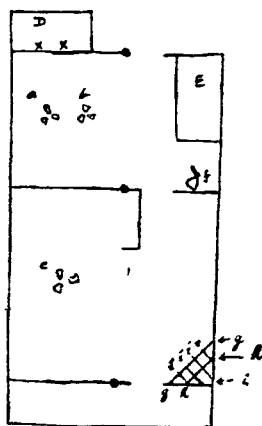


FIG. 6.—PLAN OF HOUSE OF PERFORMER OF *Lisü genna*.

a, b, new hearths for male and female guests; *c*, permanent household hearth; *d*, *bohü*; *e*, corner partitioned off, by mat, for husband and wife (and *lowüü*); *f*, special leg of beef reserved for them; *g*, *pre* branch; *h*, *chepho* branch; *i*, *zomhu* sticks; *xx*, position of posts.

The *thugiyu* referred to is a boy called in for such a *genna*, the chaste son of any neighbour will do.

For three days the performer and his *thugiyu* remain *kenna* (tabu), and cook and eat together thus. A new gourd, a new ladle, and a new funnel are used by the performer's wife, who may put *zu* (rice liquor) down near at hand in the new gourd, when the two may pick it up and drink. On the evening of the third day the *thugiyu* goes home, taking with him a leaf of *zu* and cooked meat wrapped in a leaf.

The next day the performer must remain in his house, but on the fifth day he may go out as usual. This day is called *zhangu*.¹ He may not, however, enter anyone else's house on this day. On the sixth day (*zhakre*)¹ he has to remain in his

¹ The word *zha-ngu* apparently = "fifth day"; *zha* = day; *pengu* = 5. But *zha-kre*, if it = "sixth day," must be from some obsolete form, as the current word for 6 is *soru*.

own house again. On the seventh day he goes to cut fuel for the ceremony proper, and on that day he kills pigs or cattle, according to the number of his personal friends. This day is called *si-du* ("wood-cut"). Forty pieces of meat and several gourds of *zu* are on this day taken to the place where the fuel is cut, and there consumed by the performer and his *thugiyu* and two of the performer's most intimate friends. This completes the preliminary *genna* in the month *thenia-krü*, and the persons concerned are again free to do as they please for the present.

The following month, *Zhepeo-krü* ("rice-ripening-month") is then allowed to elapse, and is followed by the month *Redeo-krü* ("reaping-month"), in which the rice for the *zu* to be used at the ceremony has to be pounded. On the fifth day of this month is the *Kevakethe genna*, marking the beginning of the harvest, and the whole village keeps *penna*. On the sixth day the village goes to the fields, and on the seventh (*ngisie*) the *pitsü* warns the village that the ninth day will be *thuzhoh*, when the rice (for *zu*) is to be watered by all about to perform the *Lisü genna*. On this (seventh) day the two intimates of the performer above mentioned (they are called *nasa*) bring each a wee basket of rice to the performer's house, which he takes and sets aside, no use at all being made of it; but after this, all the performer's friends are at liberty to bring their contributions, a little basketful each, to the performer, who puts it all in an empty rice-bin of woven bamboo in his house.

On the ninth day, called *thuzhoh*, the friends of intending performers go into the jungle and get plantain leaves for making cups, etc., a load each, and to split wood to fence in the porch where the cattle are to be killed in front of the performer's house. On this day, too, the whole village gets ready their food and *zu* for the *genna*, the actual performer having started to do so from *ngisie*, as he must complete his much more elaborate preparations by the end of *thuzhoh*.

On the tenth day of the month the rice brought by the two *nasa* is cooked and eaten by the performer, a small portion of the rice being kept over uncooked. This is taken on that day or the next, together with two halves of plantain leaf, of which the ends have not in the usual way been torn off, and a new basket, a little one; the rice is wetted in the basket and put upon the leaves. This wetted rice is then spoken of as having dried, and two little grasses, of the kind called *tsaka* and *pipfe*, are taken and shaken over the rice, when it is said that the fowls have been driven away. (The husband says to his wife, "Fowls are eating the paddy!" The woman shakes *tsaka* and *pipfe* twice over the rice on the leaves, and says "I have driven them away.") Then the husband goes out and says "Rain has fallen on the Sema side" (i.e. to the north-east). Then the woman picks up the rice, wraps it up, and puts it in the little basket and places it at the foot of the centre post of the house in the back partition of the room in which the hearth is.

This is followed by the pounding of the rice for the brewing of liquor (*zu*) for the feast itself. As this calls for much outside help, it cannot be completed on one day if there is any considerable number of performers. Accordingly, some pound on

the eleventh, others on the twelfth and the rest on the thirteenth. If, however, performers are few enough, the pounding is finished on the eleventh. This pounding of the rice is done by the young men of the clan, who drag up paddy-pounding tables outside the performer's house and there pound out the performer's rice, wearing full gala dress. In the evening they come back to the performer's house and drink *zu* with him, and receive ten pieces of flesh each, each piece to be the size of a handful. The women of the clan also put on gala dress and sift the rice pounded by the men.

On the fifteenth day of the month the *bohu* is made; that is the new fence about the performer's veranda, inside which the cattle are to be killed. On the sixteenth, the whole village observes *kizhe* (as at the *Zhuhetsü*). On the seventeenth day the performer is to kill the cattle for the feast.

On the eve of the seventeenth is the part of the ceremony called *sangi*. A new basket is set in the house, and in it a woman's brass bracelet, a pair of girl's earshells, and a fragment of a woman's cloth (new), with a bit of scarlet hair tied up in it. This bit of cloth, with the hair, is called *theko-pfe*, "sheep-cloth,"¹ because blue cloths ornamented with red sheep's wool (cf., the present Rengma woman's cloth) are said to have formerly been worn, and a cornelian bead. To these women's ornaments the following male things are added: a bit of elephant's hide a few inches long, as a shield; a very short spear a few feet long; a "dao"; a *chapri* (sporran of cotton ropes) in miniature; a little bit of cloth, woven on purpose, as a man's cloth; a miniature man's stool of wood; a bit of shell, to represent a neck conch; and a bit of human hair, formerly given by some sweetheart of the man's, but now taken from four or five old women.² These men's things are carefully kept separated from the women's things already in the basket. The next morning the performer, with his cloth wrapped over his head, takes the basket with its contents and puts it in the veranda and comes in again. His wife asks "*Ki a ga?*" ("What happened?"), and her husband answers "*Po niredi lilewe*" ("He took it willingly"). Both husband and wife lie down again, each on their own bed. Some one else in the house then says "Get up! The cock has crowed." The wife asks her husband what dreams he had, and he replies that his dreams were good, and asks the same question of his wife, who answers in the same terms.

Then all the cattle to be killed are driven into the *bohu*, where they are killed, the *thugiyu* first touching each with a little spear.

¹ This is noticeable as the Angamis have no sheep, nor are there any in their country, except such as have been imported recently by Europeans, and these survive with difficulty. No other Naga tribe that I know has a real word for "sheep." Semas and Changs call them "foreigners' goats." The Semas, Rengmas, Sangtams and other tribes using red wool for embroidering cloths use that of dogs. Goat's hair is often dyed scarlet, but is too stiff for embroidery.

² Perhaps to avoid giving grounds for jealousy to his wife.

The bodies are laid out with the heads to the east, and the performer, with his cloth over his head, takes a corner of his cloth and touches with it the near hind leg of each slain beast after saying, "I never told anyone to kill all these cattle! I must be given more in their place." Then his wife takes *zu* from the vat and fills a leaf in her husband's hand, and he touches it to his lips without drinking, and puts it down by the vat.

After this, the two *nasa* cut up the first beast killed. The others are cut up either by other men outside the *bohu*, or by the *nasa* inside. Of the first animal's liver nine minute fragments are cut and sewn by five and by four on a little sliver of cane, and put by the king-post (*kizhe*) of the house. This concludes the part of the ceremony called *tsüseoe*. The men and women now cook separately in the house.

The next episode is called *therhüza*. Still on the seventeenth day (called *voyezhu*) an old woman and virgin, wearing complete sets of bracelets and armlets and new clothes, take rice from the performer's house and wet it and put it on the pounding-table and pound with a special song. The old woman sings :—

<i>Sie</i>	<i>thudeh</i>	<i>zhuhi</i>	
pestle	strike	(?)	
<i>zhatsü</i>	<i>tsulilo</i>		<i>kralilo</i>
pound	victuals-must-be-saved	drink-must-be-saved	
<i>kechukehie-zhu</i>	<i>thutole</i>		
first-in-rank	make		

i.e. "Strike down the pestle and pound! Meat and drink must be accumulated that he may reach the highest rank of all."

The meaning of *zhuhi* is no longer known. The song is perhaps a sort of spell to ensure the performer's duly passing on from the observance of the *Lisü genna* to the still more expensive final ceremony in the series by which social status is acquired by successive steps. The pestle is either a big heavy wooden pole, used standing on the pounding table itself, and driven down with both hands into a socket cut or burnt in the table, or a heavy crooked stick like an inverted V, with one side longer than the other, which is manipulated from the ground by the side of the table.

On the same day two bits of meat are sent to two old men of each clan invited, with the news that the performer will do *Lisü*, and to ask for help.

Meanwhile the performer and his wife sit apart behind a mat put up so as to partition off a corner of the house, and no one may approach them but the *lowüü*. The *lowüü* is the functionary who presides over and directs private as opposed to public, religious, or quasi-religious ceremonies, being summoned by individuals, much as a physician or a priest or both might be called in by one of ourselves as well as

carrying out the duties of the undertaker.¹ The *lowüü* feeds the performer and his wife with meat from a specially reserved leg of beef taken from one of the beasts slaughtered and hung up within reach. He also sleeps with them on the same mat.

At this stage in the proceedings the *lowüü* ties together with two strands of red cane, a wee iron hoe and a scrap of meat; he makes a number of such bundles, and gives one each to every man in the village who has done the *Lisü genna*, while to men who have only done the preceding *genna* of *zhatsü* similar bundles omitting the hoe are given.

This completes the episode called *therhüza*. But meanwhile the *lowüü*'s official assistant, who must for this purpose be an old man past work in the fields, has been getting ready the marks on the emblematic posts which are to be carried round the village. The cutting out of the posts, carved as they are with a *mithan* head in high relief, has been completed beforehand, but the zigzag lines on the forked posts and the crosses on the straight one must be done by the *lowüü*'s assistant, and they must be cut from below upwards² (Pl. III, Fig. 2).

On the eighteenth day, in the morning, the performer and his wife are to wash ceremonially. Taking a spear and a reaping-hook respectively and two bits of soap-vine each, they go to the washing pool followed by the *lowüü*. Two new gourds are cut, one for each of them. Each of the pair draws water in the gourd, pours some into the left hand, rubs in a little soap, and touches it twice to head. The *lowüü* does not wash. Then all three return to the house, where each of them wraps in a leaf a few grains of cooked rice, and tucks it under his (or her) waist-belt. Then *kizhe* is observed, the wild vegetables known as *zhuhe*, *tserowü*, *chede*, *chephoh*, *zomhu*, *kube*, *rothu*, *chakra*, *bocha*, *phekwe* and *tehu* being added to the usual offering of rice and *zu*, and the whole being put by the *lowüü* high up on the centre post outside instead of on the inside central post as usually.

Next, an absolutely black bull is killed inside the *bohu*, by the *lowüü*, who ties two leaves to the dead beast's off fore-leg. This is followed by the incident called *mhopeva*. The woman fills a leaf in her husband's hand from the vat, and he touches it to his lips and throws it away. (N.B., *pe* = "throw away.") The bull is then cut up, and *kerrle* follows, which consists in the cooking of the liver and other titbits in separate pots for men and women, and the eating of them by the guests.

The next episode is called *katsidze*. A shelf is made across a corner of the inner room by putting first a piece of branch of the tree called *pre*, inside that a bit

¹ I have used the term *lowüü*, as that is the term in use in Kohima village, where this ceremony is performed. In *The Angami Nagas* the term *Zhevo*, which is the term used in the Khonoma group of villages, has been used. I have also stated, I think, that the *Pitsü* in the Kohima group performs the offices performed by the *zhevo* in Khonoma, as well as those of Kemovo. This is not absolutely correct, though he performs some of them, as the *lowüü* is the person who really corresponds to the *zhevo*. The *lowüü* also corresponds precisely to the Sema *lapü*.

² Many of the Sema forked posts have precisely similar zigzag marking.

of *chephoh*, and, across the two, sticks of *zomhu*, and over all plantain leaves. All those in the house wrap up rice, and put it under their belts, and thirty tightly rolled plantain¹ leaves are tied to the *pre* branch. The head of the black bull is put on the shelf together with the off hind-leg, the foot of which must point towards the front door. Then the *pitsü* and some very old woman come and eat in the house. The *pitsü* is given thirty-one pieces of cooked meat, and the old woman twenty-nine, and both drink *zu*, and are given thirty pieces of uncooked meat each. Then the *pitsü* gives one bit of cooked meat to the old woman, so that they have an equal number. The *pitsü* then gets up and puts a corner of his cloth over the old woman "as though he was going to have connection with her," and then sits down again. Again, thirty scraps of meat are cooked as *kemevo-mocha*.² The *lowüü* takes these and puts them on a leaf, and holds them over a small new bamboo basket, the basket being first held upside down. "Is it from this side it is eaten?" he asks. "It is not!" is the answer of the assembled guests. He then turns the basket right way up, and asks again, and is this time answered "It is!" so he doubles the leaf which holds the scraps and puts it into the basket, and eventually the old woman takes it away with all the rest of her shares of meat put into the same basket.

Next the *lowüü* sets out a miniature stool about 3 inches long and says to the *pitsü*, "There is your stool." The *pitsü* replies, "It is not fitted for me to sit upon," to which the *lowüü* answers, "It is the stool of our remote ancestors." To this the *pitsü* says, "Very well," and lets the corner of his cloth fall on to it.

Then in the front room the black bull's off fore-leg, with the leaves tied to it, is set down, and first the performer, then his wife, then all the inmates of his house touch it in turn with their cloths, and withdraw into the inner room, where they remain with their backs to the door through which they have just passed. Only the *pitsü*, the old woman who came with him, and four young boys, remain. The *pitsü* and the four youngsters then give the "spirits' call" (*terhoma-whi*) three times, calling softly "Oö-whe-whi." Then the *pitsü*, taking his spear, peers out of the front door, saying, "*La terhuma kia?*" ("Perhaps an enemy?").³ Then the *lowüü* pours *zu* into a leaf cup in the *pitsü*'s hand, and the *pitsü* goes out, followed by the four boys, each likewise with leaf cups filled by the *lowüü*. Then the old woman, with two gourds of *zu* for herself and two more for the *pitsü*, and in her basket three bits of rib

¹ The plantain leaf is used for all sorts of utensils, particularly for cups, plates, and for wrapping up the cold rice taken to the fields, whence its name, *te-kwe-ni* = "rice-cover-leaf."

² The *Kemovo* (or *kemevo*) is the hereditary priest, representing the original founder of the village. His functions in the Kohima group are performed by the *pitsü*, and anyone who has performed the full series of social *gennas* is called *Kemevo*.

³ So, at least, it was explained to me. One is tempted to wonder whether there has not been a confusion between *terhoma*, "spirit," and *terhuma*, "enemy," particularly as neither the old men who gave me the formula, nor the exceptionally intelligent interpreter who helped me, himself one of the leading men in Kohima village, could give any explanation at all of any part of the ritual other than "thus the *genna* must be performed."

for the *pitsü*, and two more bits for herself, follows them out. As, however, the basket is too heavy for her to carry, it is lifted on to her back and then taken off again, and the *pitsü*'s share is taken for him separately by a young man. Now that they have gone out the household may look round again.

After this, thirty-two scraps of meat are cut by the *lowüü*, and a little wormwood is burnt, and the meat is put in a pot and placed on the fire and taken off again with the statement that it is cooked. Then the performer takes a little gourd, to which he ties thirty of these pieces, leaving two in the pot. He takes his spear and goes out, carrying the gourd on his back, followed by the *lowüü*, but leaving his wife in the house. The performer goes to where the emblematic posts are, and blesses them in the following words :—

*Perin*¹ u li, *perin u cha ria sievoghe* !

Bull 's post, bull 's path willingly rise up !

The posts are now "pulled" to the performer's house. Actually the Y-shaped post is carried by a warrior, who holds it in a horizontal position, the foot of the post forwards, by walking between the arms and supporting one of them in each hand. To the foot of the post, long ropes of creepers are attached, and these are pulled on by a horde of small boys. The straight post is carried in a vertical position by another warrior,² who holds it in front of him with both hands and walks just in front of the forked post between the creeper ropes, which are attached to it. All the young men, the warriors, and the veterans of the performer's and the assisting clans precede the pulling boys ; the whole company is decked out in full ceremonial dress from the youngest boy to the oldest man, the warriors and young men carrying fully ornamented shields and spears, or, if they have them, guns, which they fire off at intervals. Preparations are made for this display for months beforehand, articles of dress, etc., being borrowed from all the villages of the tribe within reach. The whole spectacle is most impressive.

After reaching the performer's house, the performer is left standing there while the procession moves off to the village. Until the posts reach his house again, there the performer must stand. Meanwhile the procession perambulates the village, visiting all the open spaces in it. These open spaces are reserved areas of flat ground among the houses crowded at different levels on to the top of the hill, and serve for playgrounds and for all sorts of public purposes. Each has its name, being known as such and such a "pool." When the procession reaches one of these "pools," it first circumambulates it with loud cries, firing of muskets, and brandishing of weapons. The warriors line up at one side, and the small boys drop their ropes, and run and jump across the open space. Then they return, pick up their ropes

¹ *Perin* is apparently an obsolete word meaning a "mithan" (*Bos frontalis*). The ordinary word is *gwi*.

² In 1920, when no suitable warrior was available for the purpose, a young man carried the forked post under explicit orders of old warriors, who said that no evil should befall him for it.

and the posts, move to one side, leaving room for the men to form up in lines, dance *en masse* across and around the "pool," and draw aside to allow individuals to display their athletic prowess by leaping into the air to considerable heights with amazing agility, followed by a furious stampede of the whole crowd across the "pool." Eventually the procession moves on to repeat the performance at the next "pool." All this to the accompaniment of the most barbaric shouts and cries and the incessant firing of guns.

When the procession gets back to the performer's house, he puts the gourd, which he took with him when he sent to bless the posts, into the back room, hanging it upon a post there. He never touches it again. Then he comes out and looks at his posts; then goes inside again, takes new rice (cooked), wraps it up and tucks it under his belt; then comes out again and watches the *lowüü* take the ropes off the posts. He then goes back into the house, where he and all his household change the rice under their belts. He then goes out, selects a site for the erection of the posts, and, having pointed it out to the *lowüü*, returns inside. The *lowüü* digs holes for the posts, sets them up, ties a bit of creeper round them, and sticks in a wee leaf of *zu*, as at *kizhe* (Pl. III, Fig. 2). A little of the blood of the black bull is put by the *lowüü* on each post. The performer then blesses the posts in these terms:—

"Zhatsü	ha	nengule		kechukehie-zhu	tsülilo
Pounding this	taking-pleasure-in	first-in-rank	food-to-be-saved		
kralilo	perin	u li	perin	u cha	ria
drink-to-be-saved	bull	's post	bull	's path	willingly
<i>lhurnlo</i> ! ¹ "					
become-heavy-with-life !					

Then a hole is made in the wall beside the front door and two pipes inserted, one for the Kimhoma clans, the other for the Sakuma clans of Kohima.² Inside these pipes, salt and *zomhu*³ are placed as the shares of the Kimhoma and Sakuma clans respectively. *Zu* is then poured into the pipes from the inside of the house, so as to run through the wall and fall outside, washing out on its way the salt and the *zomhu*. The *zu* is poured into the Kimhoma pipe before the Sakuma pipe.

¹ *Lhurnlo* is apparently another obsolete word only used in this connection.

² Kohima village is, for ceremonial purposes, divided into two groups called *Kimhoma*, composed of the Dapfetsuma, Puchatsuma and Rosuma clans, and *Sakuma*, comprising the other four clans, Chetonoma, Horotsuma, Hrapvoma and Cherama. For other purposes they are usually regarded as being divided into *Pferonuma*, a phratry comprising the six clans first mentioned, and *Cherama*, which the *Pferonuma* speak of as "alien," *solhima*, with particular reference to an occasion, connected with the origin of the rain-making rite, on which the Cherama clan refused to co-operate with the other clans of the village. There are yet again other legends giving various and divers origins for the different clans. *Vide The Angami Nagas*, pp. 238, 256-8.

³ *Zomhu* has already been mentioned in two other connections in this ceremony. It is a vegetable, valued for its acid taste.

Next the *lowüü* takes a basket called *köpe* on his back, putting into it a dog pup, to which he gives a miniature shield and spear, and ashes ("in the name of the clouds"), and cotton seeds ("in the name of hail"). With this basket he climbs up on to the roof of the performer's house, whence he throws out the ashes, saying that they are clouds, and then throws out the cotton seeds saying that they are hail, and finally throws down the puppy with its spear and shield. Whoever can get hold of the puppy carries it off and keeps it, but as there may be a hundred or so young men scrambling for it, it sometimes happens that the unfortunate animal is killed in the scrimmage.

Next a bull calf, also with a "spear" and a "cloth" (the spear is a rough miniature and the cloth a mere fragment of white cloth), is led out on a rope of creeper, and this calf, too, is scrambled for by the young men with much violence and more or less killed in the process, after which it is completely killed by stabbing it with a piece of wood, and its liver is torn out and given to the performer, and the carcass is torn in pieces by the young men. This calf must not be killed or cut up with iron in any way at all. The *lowüü* buries the liver inside the performer's house, and at the same time buries two *pre* sticks with the thicker ends towards the front of the house, or the east, and the smaller ends the other way, just as a house is built with its smaller end westwards.¹

Then the *lowüü* makes fire in the corner partitioned off by a mat, and he and the performer and the performer's wife drink *zu*, after which the guests outside may also drink, and the ceremony is over.

But a month later the *lowüü* comes again, and pulls up the posts and puts them down in the *bohu*, in which they had been erected before, but against the side of the house where they remain. And until the First Sower² has sown the rice the following spring, the performer may not eat outside his own village, nor visit another village at all.

How far we may infer, from the details of this Angami ceremony, the rites that must have attended the erection of the huge megaliths at Dimapur, we can only guess. Elephants are depicted in the carving on many of the stones; no doubt they helped in the tremendous effort that must have been needed to haul the huge blocks through the forest from the Diphu gorge, but they may also have contributed their lives to the holocaust of sacrifice in a ceremony of which the *Lisü genna* can be at most a microcosm. Fights between tigers and elephants, also depicted on the carved megaliths, probably formed part of the spectacle, as they did at the festivals of the Ahom kings. And we shall perhaps not go far astray if we take the puppy-dog, with its spear and shield, and the bull-calf, whose liver is buried not eaten,

¹ By preference the Angami orientates his house so that the front faces east, and catches the morning sun, but this preference is by no means rigorously adhered to. The front of the house is both higher and broader than the back end.

² *Vide The Angami Nagas*, p. 189.

and who is also vested by a spear and a cloth with sinister attributes of humanity, to be the unfortunate latter-day representatives of more terrible offerings of human life attending the erection of the monoliths at Dimapur.

In a recent visit to some Sangtam villages across the frontier, which had not before been visited by any white man, I observed two variations of the Y-shaped post, which were new to me (Fig. 1). In one a cross-piece consisting of a simple stick was tied across the horns of the Y. I could get no reasonable explanation of why it was done. In the other form a wooden peg, made in one piece with the rest, projected at an angle of about 40 degrees from the centre of the post at the point of the branching of the arms, suggesting that a hermaphrodite post was intended. In both cases the horns of the Y were very much more curved than in any forms that I have seen elsewhere.

With regard to the erection of Y-shaped posts by the Kacharis, Mr. C. R. Pawsey tells me that in the Kachari villages in north Kamrup a miniature wooden Y is regularly placed in front of the village *nāmghār*, which takes the place of the original *morung* or *dēka chūng*, owing to the partial Hinduization of this part of the tribe.

NOTE.—As regards other accounts of the megalithic remains at Dimapur, the following may be referred to :—

- (1) Major John Butler, *Travels and Adventures in Assam* (Smith, Elder & Co., 1855).
- (2) Colonel H. H. Godwin-Austin, "Ruins at Dimapur on the Dhansiri River," *Journ. Asiat. Soc. of Bengal*, 1874, p. 1.
- (3) Dr. T. Bloch, *Archæological Report*, 1902-3.
- (4) Sir E. A. Gait, *History of Assam*, pp. 244, 245 (Thacker & Spink, Calcutta, 1906).
- (5) Colonel L. W. Shakespear, *History of Upper Assam, Upper Burma, and the N.-E. Frontier* (Macmillan, 1914).

Of the above accounts I have been unable to consult Nos. 2 and 3.



FIGS. 1 AND 2.—FORKED STONE PILLARS AT DIMAPUR, OF (?) OLDER ERECTION, SHOWING INWARD CURVE OF ARMS. THE CARVINGS NEAR THE FOOT OF 2 REPRESENT ELEPHANTS.



FIG. 3.—Y-SHAPED MONOLITH OF (?) LATER DATE THAN FIGS. 1 AND 2. MAJOR BUTLER (*Travels and Adventures in Assam*) ESTIMATES THE AVERAGE WEIGHT OF THE FORKED MONOLITHS AT 20 TONS EACH.



FIG. 4.—THE LARGEST OF THE CYLINDRICAL MONUMENTS (ESTIMATED HEIGHT, 20 FEET).



FIGS. 1 AND 2.—CYLINDRICAL MONOLITHS OF (?) OLDER DATE.

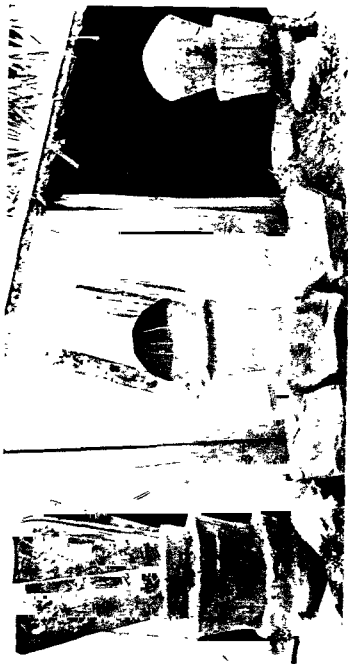


FIG. 3.—WOODEN POSTS IN FRONT OF AO HOUSES
COMMEMORATING FEASTS.



FIG. 4.—WOODEN POST IN FRONT OF
AO HOUSE COMMEMORATING FEAST.

CARVED MONOLITHS AT DIMAPUR AND AN ANGAMI NAGA CEREMONY.



FIG. 1.—GROUP OF CYLINDRICAL AO WOODEN POSTS TO WHICH MITHAN HAVE BEEN TIED FOR SACRIFICE.



FIG. 2.—POSTS FASTENED TO THE FRONT OF THE HOUSE OF AN ANGAMI WHO HAS PERFORMED THE *Lisù* GENNA, IN WHICH THESE POSTS WERE USED.

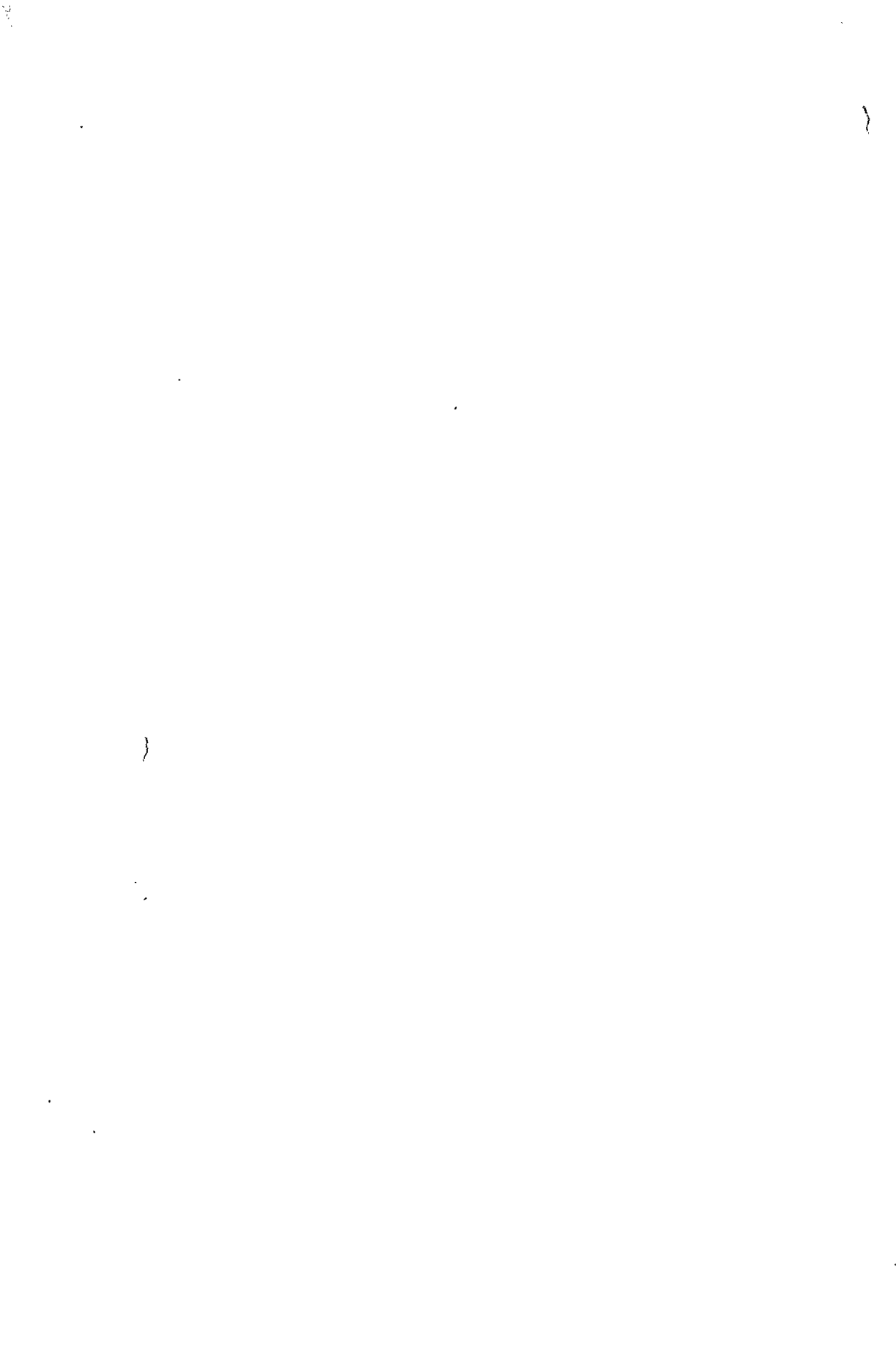




FIG. 1.—FORKED POST ERECTED BY A LHOTA CLAN, WHICH IS NOT ALLOWED TO ERECT STONES, IN YEKHUM VILLAGE.

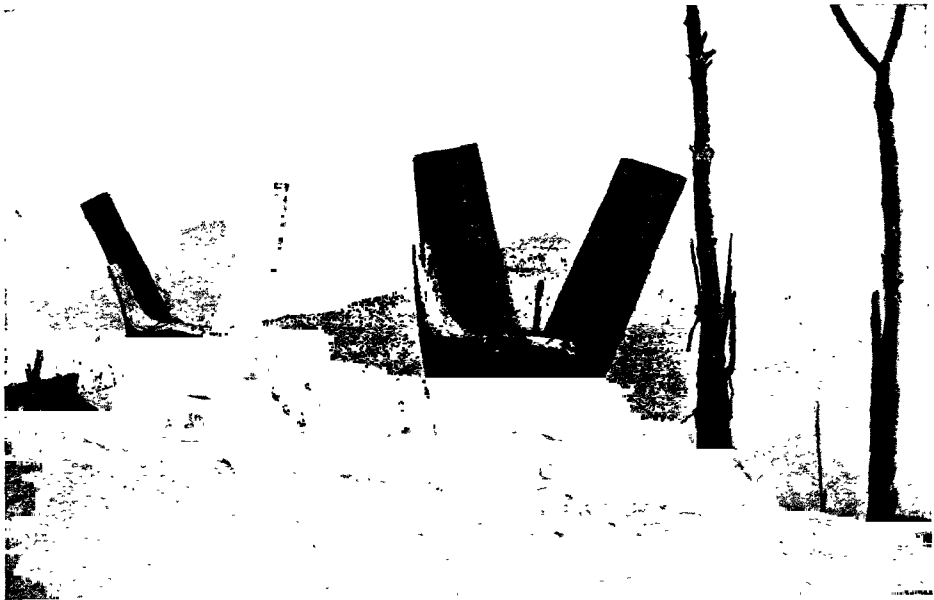


FIG. 2.—SEMA POSTS CELEBRATING FEASTS ; ABOUT 11 FEET HIGH, AND CARVED WITH MITHAN HEADS AND *aghñhu* (COMPARE WITH PATTERNS ON CYLINDRICAL MONOLITHS AT DIMAPUR. *Aghñhu* = enemy's teeth.)

CARVED MONOLITHS AT DIMAPUR AND AN ANGAMI NAGA CEREMONY.

THE CULT OF THE DEAD IN EDDYSTONE OF THE SOLOMONS.

By A. M. HOCART.

PART I.

[WITH PLATES V—IX.]

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I.—INTRODUCTORY.

THE present researches into the manners and customs of Eddystone Island were undertaken with the assistance of the Trustees of the Percy Sladen Trust, and of Exeter and Jesus Colleges, in 1908. The work was carried out jointly by Dr. W. H. R. Rivers and myself. We worked together for three months in Eddystone, then I carried on alone for a while, after which we again joined forces in a tour round Vella-Lavella. I then proceeded alone to Roviana and stayed there six weeks. I returned to Eddystone for a fortnight to follow up clues picked up elsewhere; then devoted a fortnight to Nduke, and came back to Eddystone for the last time, leaving on January 1st, 1909.

Our joint work was apportioned according to subjects, Dr. Rivers taking kinship, social organization, ghosts, gods, and other subjects, while I took death, fishing, warfare; a few subjects, such as the house, were joint. When working alone

I took over the whole. Of course, these divisions were rather artificial and we constantly overlapped, and either was constantly gathering material that belonged to the other. We constantly kept one another informed. It follows that the material of either of us published separately must be incomplete, but publication has already been so long delayed that it is better to publish only a fragment than withhold valuable material any longer. I am therefore publishing as a first instalment my own information on the Cult of the Dead as practised in Eddystone; it is sufficiently full to be of use, and indeed gives the essentials. The subject of chieftainship was not properly mine, but my later visits cleared up a certain number of obscurities, so that it can be used at least as an introduction; the chapters on Death and on Skull-houses can be considered as complete, barring, perhaps, a few details. Ghosts were more thoroughly investigated by Dr. Rivers, but the fragments I have collected can usefully be included here to complete the subject. The gods also come within Dr. Rivers' province, but the essential part, the ritual, did not come out till my second visit, so that the bulk of the information will be found here (in Part II). The reader, however, should bear these facts in mind if he is inclined to criticize the incompleteness of the material.

Methods.

Our work was done through interpreters. Their pidgin was of the most rudimentary description, but as our knowledge of the language improved, their scanty English was richly supplemented with native words. We were frequently able to understand what was said before it was interpreted. Prayers and some stories were taken down word for word and constitute an effective check on interpreted material.

Working through interpreters is certainly not ideal, and it is to be hoped that field-workers will in the future undergo a linguistic training and seek to work in the vernacular; but this is not given to all, and it is a great mistake to imagine that because interpreted work is not the best, it therefore is not good.

Our interpreters were mostly poor; but one of them, Njiruviri (see Pl. V, 1 and 2), turned out in the end to be not only the best interpreter, but head and shoulders the best informant. It is a pity that, being in possession of much secret lore, he carefully disguised his knowledge and was therefore long wasted as a mere channel of communication, when he could have been used as an original scholar and thinker. The eldest son of the chief who controlled the most important cults in the island, debarred by being a hunch-back from great physical activity, he had devoted himself to thought and learning. His knowledge was not only vast, but most accurate: reluctant to give away the secret formulæ, he was mercilessly conscientious in repeating them once he had been induced to do so. He knew exactly how much he knew, and always distinguished his theories from facts. Had he been a European he would have ranked

high among the learned, and an account of the island based on his evidence alone would still be invaluable.

Kundakolo (Pl. V, 3 and 4) was discovered early and was a great contributor. His knowledge was vast, but his memory was not as good as it had been; he was also a dreamer with a peculiar imagination, as could be seen by his drawings. He also was conscientious and never claimed to know what he did not. He owned all the great lore of his village and we were constantly referred to him.

Leoki (Pl. VI, 1 and 2) was the best narrator and expositor of any; in fact he was the only one who seemed able to tell a story, though he fell far below the Rovianese. He contributed chiefly tales and a few legends, until, running short, he decided to unfold one of the most important rituals of the island, the cult of the gods. He was thoroughly accurate and aware of his limitations. In fact it may be said that an informant who romances is very rare indeed, when a careful check is kept and they know it, for they are very mindful of their reputation.

All these belonged to the same village of Narovo. Keana, my interpreter during my last visit, belonged to Simbo and thus put me in touch with some Simbo material. He was intelligent and not afraid to correct misconceptions under which the others had allowed us to labour for months. It was he who threw most light on chieftainship. He was very good at explaining such matters, but he was anything but conscientious, and when it came to long formulæ his chief thought was boiling everything down.

Rinambesi was the oldest man in the island, was noble in Karivara, and the father of one of the chiefs of Ove. His knowledge was not proportionate to his age or station, and his memory was not good, but with his son and grandson he made some interesting contributions.

Such were our chief informants. Scarcely a native who came to see us but contributed something, for not one but possessed at least a remedy.

Topography.

Eddystone Island belongs to that group of the Solomons which I shall call the New Georgian, because New Georgia is the largest island, and appears to have been the political centre, at least that part of it which is called Roviana (Rubiana of the charts). The other islands are Randuvu (Rendova on the charts), Montgomery Island or Tetepare, Nduke (Kulambangara on the charts), Gizo, Vella-Lavella and Ganonga (Ronongo on the charts).

The island of Eddystone lies to the extreme south-west of this group. It is quite small, nearly two sea miles long by one and a fifth at its broadest; but the dense forest that covers it makes walking slow and multiplies distances. The island is nearly cut in two by the deep bay of Narovo, which penetrates it from the north-west, a low and narrow isthmus connecting the two parts. The northern parts consist of hills with easy slopes; the southern is very steep, rising to 1100 feet

at Matendini and 1025 feet at Patukio. It is flanked on its eastern side by the island of Simbo, which is level apart from a few low hills. The coast south of Narovo Bay is penetrated by a lagoon which evidently fills an extinct crater : all round it are sulphur patches and boiling springs ; a hot spring is found near the top of Matendini, and right at the top is some steaming soil.

The population number perhaps some 400. In colour they vary from dark brown almost to black. Their features are not usually negroid ; their noses are nearer to the Polynesian type, sometimes very large and aquiline (see Pl. V, VI). Their legs are inadequate, probably because they never go by land if they can go by sea. The hair is usually worn long and bleached with lime ; sometimes it is nearly burnt auburn with lime and combed out into a head of hair somewhat after the Fijian style. The younger folks, when off work, draw white lines on their faces with lime. The dress of the men consists merely of a cloth passed between the legs and round the waist. The women pass a cloth between the legs and spread it out in a wide pad behind, securing it with a narrow strip of cloth as belt.

As ornaments they wear armlets, made in Roviana, of a kind of grass dyed red. These are worn just below the shoulder. On the elbow they wear arm-rings ; these are of two kinds : the *mbokolo*, made of clam shell, the best being made out of fossils, and the *mbulau*, made out of a conical shell, marked with brown spots in rows. These arm-rings are used as money or *poata*, but the term *poata* usually refers to the large and heavy shell-rings, which are never used as ornaments ; I shall refer to these as rings or shell-rings as opposed to arm-rings. Some *poata* are cut out near the hinge of the clam and have an orange stain which varies in extent ; these are called *mbakia* and are more valuable than the plain white ones ; they are sometimes mounted in a collar with the same red grass as is used for armlets ; it is then worn on the chest. There are very small rings roughly made, apparently out of a conical shell, and called *ovala* ; their use seems to be entirely ceremonial. Sacred rings are called *riko* ; some ancient, rudely-made rings attributed to the gods are called *mbariki*. The *rango* is a large pointed spiral shell rubbed down till only a vertical section remains showing : this is only used ceremonially ; so is the *paŋgosia*, a shell ornament which seems to have varied in shape.

Every man carries about with him a basket which serves as pocket and usually contains his betel mixture, his coco-nut scraper, his comb, and his fish-hooks. In former times they carried paddle-shaped clubs, now a so-called tomahawk consisting of an iron blade mounted on a very long handle pointed at the end ; it is never laid on the ground, but stuck upright ; it is also used to husk coco-nuts.

The men fish, and clear the ground for the women to plant. The women also make bark-cloth.

The houses are thatched with ivory-nut leaf ; the walls are made in the same way. They usually contain low platforms to sleep on and a shelf to store nuts, nets, etc. The *pai*, or halls, always contain canoes, but that is evidently not their

essential function, since there used to be halls right up on the hill slopes ; they are used as meeting places and for feasts.

The language is Melanesian, with the accent on the last syllable but two, except, perhaps, when the last but one is long. The Melanesian *g* appears sometimes to be labialised and is easy to confuse with *v* or *w* ; we long wrote *Pa Na Vundu* for *Pa Na Gundu*, and we do not guarantee our spelling in every case ; there was also some uncertainty over final *i* and *e* and over *ae* and *ai*. In spelling I follow Lepsius' alphabet, which is the same as that now used in Sanskrit.¹ Consonants have been spelt single, as there was some difference of opinion about them ; but it appears certain that *k*, *m*, *n*, *t* were lengthened after an accented syllable, thus: *rikko*, *tammu*, *maranni*, *ngetto*, but *mbariki*, *poata* ; on the other hand I always spelt *mbokolo*, *pitu*, *mate*, *ite* as against *ngettu*.

Proper names usually consist of two dissyllabic parts : *Alembule*, *Alevia*, *Alepitu*, *Miapitu*, *Kundaite*, *Ondaite*. The man was usually called by one of the names unless it was necessary to distinguish him from another. Women's names usually contained *Vuru*, *Kalo*, *Mali*, *Atu*, etc. Some, if not all, of these components have meanings, thus : *Mbule*, calm weather ; *Ngeto*, war-canoe ; *Kunda*, to abuse ; *Ite*, small ; *Kolo*, water ; *Kalo*, whale's tooth. The compounds, however, do not seem to make sense except in a few cases where it may be accident ; thus, *Mule Hembala*, returned from overseas, *Mate Hembala*, died at sea.

Place-names are sometimes simple : *Tumbi*, *Renjo*, *Marondu*, *Pepere*, *Mbulolo* ; sometimes they are compounded : *Patu Meka* (the single stone) ; *Patu Sogara* (Scolding Stone), *Patu Gele* (Long Stone). The words *patu*, stone, and *nari*, large kanarium, occur most frequently in these compounds. *Inda* (coco-nut) and *pie* (water) also occur. Place names seldom occur without the preposition *pa*, but we got into the habit of writing some place names without, and some, especially those preceded by the article *na*, with it. The use was never properly observed, but our practice is probably founded on native usage, and arose out of the fact that in simple enumerations some kept the preposition, having become inseparable from it, others dispensed with it, not having become fixed ; thus, *Ogogo*, *Ou*, *Tumbi* ; but *Pa Na Gundu*, *Pa Njuno*. The district names occurred without preposition after *tinoni*, thus *tinoni Simbo*, a man of Simbo.

The nearest island to Eddystone is Ronongo or Ranongo of the white man ; its real name is Vesu Gogoto or "Eight Hundred." Ranongo is a corruption Ganonga, one of its three districts. The other villages are Kumbokota in the North, and Luŋga in the south. I shall keep the name Ganonga Island for the whole island, as opposed to Ganonga district.

II.—SKETCH OF SOCIAL ORGANIZATION.

The native name of Eddystone is Mandegusu, which means The Four Villages. These four villages or districts are : Narovo round the bay, Ove on the south-west

¹ = Engl. *ng* in *sing*.

coast, Simbo on the little island flanking the main one, and Karivara on the eastern slopes of Matendini. To the white men and the natives of Roviana and Nduke the whole island is known as Simbo, after the third named district.

These villages, except Simbo, are not compact groups of houses ; they consist of hamlets comprising one or two houses, sometimes fenced in, generally not. These hamlets are usually very much scattered, a cluster here and a cluster there. In Narovo they line the head of the bay : one group on the south coast from Tumbi to Manduai known as Pa N'Ulu or " Above " ; one on the north coast known as Pa Na Mbatmbata ; in the inmost corner was Pa Na Kongu, " in the Bay " ; inland lay Pa Na Paga ; also Pa Na Kota, " on the level," consisting of the two hamlets of Le'ana Kotakota and Pa N'Embala ; Mbulolo and one or two hamlets lay on the east coast. In Simbo these hamlets, usually separated by fences, formed a group near the south entrance of the lagoon.

The people have country houses in the northern part of the island where they stay while they are working on their gardens. These temporary settlements may develop into hamlets ; thus Tapurai at the extreme north was continuously inhabited, and appeared to be the chief residence of Kave (see Pl. VI, 3) and his people, though he was frequently in Ove too. There was a good hall and good houses in Tapurai.

The hamlets usually form little clusters which have names. The hamlets on the south shore of Narovo Bay from Tumbi to Manduai were known collectively as Pa N'Ulu or " Above." The north shore was Pa Na Mbambata, " the Rocky Shore " ; the head of the bay was called Pa Na Kongu, " in the Bay."

Most of the hamlets are recent. The people used to live on the slopes, having only canoe-houses on the shore. Thus the inhabitants of Pa N'Ulu used to dwell higher up in Pa Soro ; they came down to bathe in Renjo ; Pa Na Kongu and Pa Na Kota go together, but it is not clear where they dwelt formerly. Those of Pa Na Mbambata and Pa Na Paga have come down from Pa Tita, a group of hamlets on the slopes of Patu Kio including Tita, Katapana, Nanasai, Ogogo, P'Olone, Pa Na Nari.

In former days the people of Pa Na Mbambata, Pana Paga, Pana Kongu, and Pa Na Kota, who form the bulk of the population, did not fish ; they were a bush-people. The first evidence of a former bush-people was obtained in Roviana, where I was told the people of Katapana could not catch fish. We had lived three months among these former bush-people without ever getting any hint of their past. Probably the Katapanese are ashamed of it, for bushmen are held in contempt.

The people of Katapana could not fish and did not wash ; they became sea-sick in a canoe ; they used to wander in the bush north of Narovo Bay in search of pigs and coco-nut crabs ; if they heard that fish had been caught they brought vegetable food to exchange for it. It is only recently that they have learnt to fish, under the chieftainship of Rongana, of whom the present chief is the fourth successor.

Kundakolo, about seventy years of age, could remember how once, as he and his people were bonito fishing off Pa Na Pou, the people from the bush sat on the shore reef and scooped the water in play to imitate the fishermen. He was an adult when they began to fish ; they acquired the art by intermarrying with the salt-water people. Their dissolute ways had prevented intermarriage till then, for they would rape any woman they met, and this led to wars. They have not entirely given up their bad habits, but even now " some fellow he think 'long woman." The people of Katapana spoke in a small rasping voice which is still characteristic of some of them. I could find no difference in the vocabulary except that for two they said *kakela* in their high-pitched tone, instead of *karua*. They have now "straightened" their speech a little, but the people of Ove, Karivara and Simbo speak correctly.

In each of the villages there were chiefs ; their prerogatives, ranks, powers, and jurisdiction were more difficult to ascertain than anything else, for here we are not dealing with hard facts, hard and fast conceptions, such as are possible in handicrafts and in speculation, but fluid customs, elusive emanations of tact and experience ; they are the hardest things of all for a people to express who are not trained in abstract thought, and not accustomed consciously to analyse human personality. Even when possessed of a good command of the language the investigation is exposed to misunderstandings or misconceptions. For an informant has no way of qualifying statements or expressing the relativity of rules, except by making absolute but contradictory statements. He will say, " he can, but he cannot " where we should say, " theoretically he can, but in practice he never does, as it would make him unpopular."

Many of our difficulties probably arose from the ambiguity of the word *mbañara*, which may mean either a chief or one of chiefly blood, as our word prince is often used to mean a monarch, though usually it designates a member of a royal family other than the king.¹ Thus in Simbo, Erovo was regarded as a " great *mbañara* " although he had no subjects, no " boys," as they say, and no authority until Nimu, the present chief dies : " Erovo no speak yet ; spose Nimu he dead, Erovo he talk."

Complete agreement did not exist as to the status of certain chiefs. Those universally acknowledged were : Rembo and Sogaviri for Narovo ; Laiti and Kave for Ove ; Mbolana and the late N'aturu for Karivara ; Nimu and Rondi for Simbo. Doubtful was Atolo of Pa N'Ulu in Narovo, yet his father was said to have been a great *mbañara* and his elder brother as a child had been ceremonially " made a *mbañara*." He was certainly the leading man in Narovo. It must be remembered that a man may probably be *mbañara* in the sense of chief, but not *mbañara* in the sense of noble. For rank undoubtedly exists, and seems to depend more on the mother than on the father. Nimu, the leading chief of Simbo, is a great *mbañara*, because his father and his mother both were ; Rondi, the second chief, is *mbañara*

¹ Sanskrit *rājā* is used, in exactly the same way, of a king or a member of the ruling caste.

in a smaller way because he owes it to his mother only. Rembo, the leading chief of Narovo, is *mbanara* on both sides; Soga Viri, the second, was *mbanara* through his father; some said he was not a *mbanara*, but a scion of *mbanara*. He certainly acted as a chief, though he seems to have owed this to his wealth and the absence of anyone better born.

We had a number of cases of men who were *mbanara* in their mother's country and lived there; for instance Laiti in Ove, Veo in Roviana.

There were women *mbanara* (*mb. maŋgota*). These were not the wives of chiefs, but women of rank. There was one living at the time of our visit. A chief's wife is called *kalao*, his children *komburu tavia*. There is also a term *komburu mbanara*, or *mbanara* child. Unfortunately we took it for granted at the time that it meant a young chief; it certainly does not mean that, but probably has the same meaning as the Fijian and Polynesian equivalents,¹ namely, one of noble descent through the mother or through both parents, as opposed to a chief of not fully noble descent.

Noble children sometimes went through a ceremony called *vambanaria*, or "making into a *mbanara*." When the child is quite little they put a ring on each ankle. When it reaches the age of twelve or thereabouts, they hold a feast at which they place one of those ancient rings called *mbariki* underneath the ankle-ring; they hit the ankle-ring with an orange-stained ring (*mbakia*), then they place two *mbakia* on the child's lap saying "You build halls, set up skull-houses, you be the successor."² This ceremony was performed for Itu and Kwini, the son and daughter of Kave, chief of Ove.

Informants were unanimous that a *mbanara* was not *mbanara* of a hamlet, or of a group of hamlets, but of a whole village; thus Sogaviri was *mbanara* not of Olepeninga, his hamlet, but of Narovo; Rembo was *mbanara* not of Patusogara, his residence, nor of Pa Na Paga, his group of hamlets, but of Narovo. Fact bore out the very emphatic statements made by the natives. We found either chief in a district ordering a feast or a foray for the whole village. On the other hand the chief had his "boys" (*komburu tanisa mbanara*), the inhabitants of his part of the village; there might be strife between two chiefs of the same village. The apparent contradiction is removed if instead of condemning the natives as liars, we try to do them justice. Each chief has his own particular followers, a greater or smaller section of the village; his closer connection with that group may be due to marriage, and consequent relationship, as happens in other parts of the Pacific; in small affairs he calls upon his followers only, but in any great enterprise the whole village is concerned, and either chief will take the initiative in proposing it and will be supported by his colleague. This is the way the native puts the case: "If Nimu orders a feast, Rondi 'hears talk 'long Nimu' and bids his boys prepare food; if Rondi is inclined to have a feast, he tells Nimu; who tells his boys."

¹ *nōne turāna; tama ali'i.*

² *Ago mu taviti paille, tomikia tambuna, ago tongo mbei.*

The power of a chief naturally varies. It depends on birth, wealth, and magic ; the natives never mention personality ; they do not appear to have discovered it. Muke, Nimu's predecessor, was the leading chief while he lived ; indeed Dr. Guppy¹ described Eddystone as being " under the sway of a powerful chief who resides . . . in an islet bordering its south-east side." The native account is that " he did a great deal : he made big feasts, built big houses and many were his retainers ; he had plenty of gardens and shell-rings ; his property was large ; that is why he was a big chief. Nimu is not as great as Muke ; he has not been a chief long ; presently he may be very wealthy and become a great chief." Since Muke's death Mbolana of Karivara is the leading chief. Muke was higher, but now that he is dead Mbolana has taken his place, which he owes to his age and the high rank of both his father and mother. Upon his death the first place will pass to someone who is " strong 'long something." Rembo has much money and vast property in pigs and houses ; if new skull-houses are built he builds the first, the others follow ; he is strong on account of his pigs and money and *kanarium* trees. Next to him comes Nimu ; he is powerful ; he has many spirits (*tomate*), spells, and great is his knowledge. A chief who owns spirits and spells is powerful because formerly the chief consulted the spirits before an expedition and the spirits said : " Is it well ; go and kill those men," whereupon they went to kill. Laiti is not powerful now ; he has not much on which to rest his power (yet he is described as a " big " *mbanara*, possibly on account of birth). Kave is powerful : he has plenty of shell-rings, arm-rings, and gardens ; anyone he commandeers comes and works for Kave, whether the work is a feast or skull-house, or canoe-house. He derives his wealth from both father and mother. " Keep them for yourself," said his parents, " when you are old keep them for your children : they will be chiefs by and by." If Laiti orders the people to work they will do it or not do it ; if they refuse he can say nothing : he has no power ; were he strong they would fear him ; if he speaks, only his kinsmen obey him, the mass decline. If Kave speaks he is obeyed ; if they refuse he is angry. (There is no doubt Kave was a strong man and looked shrewd and unscrupulous ; Laiti was shabby and certainly not a powerful character.) Rondi's power rests on his chattels : he is not very powerful. Sogaviri's money is his strength.

The common people are afraid of a chief's anger : if it lasts the offender will present a ring to appease it. We do not know whether the *mbanara*'s anger has supernatural effects (*mana*) as in Fiji and elsewhere. We discovered no etiquette towards chiefs, though they were evidently treated with respect, and even boys, if of rank, obviously enjoyed consideration.

The activities of the chiefs had mostly ceased with head-hunting. Njiruviri complains : " No one is mighty now : they are all alike, they have no money ; they cannot go head-hunting ; they all 'stop nothing'." A woman says : " Formerly the chiefs ordered their men to build canoes and they went forth together ; that

¹ *The Solomon Islands*, p. 14.

was before my time ; now it is not done : the chiefs are dullards (*tuturu*), and like common folk (*tinoni homboro*).” The functions of a chief are usually summed up in the phrase, “ he make him big fellow (*kaikai*) ” ; for the organizing of big feasts implies all the rest : funeral ceremonies, new skull-houses, new canoes, new halls (*pai*le), and head-hunting.

Under the chiefs came the *iviva*. This word merely means “ married man,” but it was constantly used with special reference to the older married men, the heads of families. At a feast the bachelors and young married men would keep together while the older men formed another group referred to as *minate iviva*. The functions of the elders are thus described : “ *Iviva* stop nothing ; he hear talk ’long *mbañara* ; he look out ’long *mbañara* ; he all same boss (*i.e.* foreman) belong *mbañara*. ” This authority is limited to the hamlet : “ He no go all over.”

There were no clans or any such social divisions in Eddystone.

III.—DEATH.

Formerly men did not die : they became mortal when the Mad One (*Tuturu*) made flexible their limbs which had been rigid at first. Once upon a time a woman died. Her two children took the body up to Matendini and left it there. Then they wept for her. She came back and said, “ Here am I, my children.” “ No, you are not she, for she was black.” (She was now brown.) “ Indeed it is I,” she said. “ No, you are brown.” “ It is I indeed, I have come back.” But they said, “ No, you are not our mother.” Then she bade them kill a lizard (*pinjikole*), wrap it up and take it to Matendini. They waited four days, then went to see : the lizard’s body was gone. When they came home their mother was gone. She said, “ As the lizard which died did not come back, so it will be for all men.” She departed to Sonto, where men go still. That is why men who die do not return. Had those two said, “ You are our mother who has come back,” men would not die ; but now lizards go to Sonto and so do pigs, dogs, birds, plants, broken shell-rings, tomahawks, and arm-rings.

The word for death is *mate*, which means also sickness. Actual death is often expressed by *mate ndapu*, that is “ quite dead,” in pidgin, “ die finish.”

A dead man, or any part of him, his corpse, his skull or other relic, his soul, is called *tomate*, to being an obsolete article.

Natural death appears to be recognized, for a man who dies of old age is said to “ die of a broken spine ” (*mate loka loka*), because he is so bent.

A man dies if his breath (*sagena*), “ that something he stop long belly,” leaves him. It departs and no man sees it. We could find no connection between the breath and the soul.

The soul is called *galagala*, which also means a shadow, a reflection ; it is caught in a camera. A Shortlands man says “ it stop all over a man ” : by taking a looking-

glass you can see it. When a man dies, his soul (*galagala*) comes out at the mouth : some men can see it by the use of charms described in Section IV. Rakoto says it is just like a man and big or small according as it belongs to an adult or a child. A certain shadowiness seems associated with departing spirits, for one man asked us whether a vague figure in an advertisement of Odol was a ghost. Souls of natives are brown, that is, lighter than the living ; they are like " Bugoto man," or " half caste," only the face is dirty. Njiruviri believes that a white man's or a brown man's soul turns black.

When the soul leaves the body it goes and stays underneath the ridge of the roof. Njiruviri defines the exact spot as that between the upper and the lower ridge-beam at the gable end, where the consecrated areca-nuts (*ure*) and the scare-ghost are hung ; one informant suggests both the ridge and the shelf.

Disposal of the Body.

The following deaths occurred during our sojourn : Ngea in Lenana Kotakota, May 24th, sunrise ; Irana in Ove, June 6th in the morning ; Widow Taru in Tapurai, June 22nd at dawn ; Njukili's new-born child in the confining-house (*savo*) at Ruru, July 14th ; Mbuko in Mbetapiro.

Mbuko was the only one we witnessed. The circumstances were peculiar, as he had been wasted to a shadow by the Kita or Spirits of Wasting Sickness, so that the people were afraid and did not dispose of him normally. He was thought to have died in the night and the wailing began in the morning. I went to see, but found him breathing again, and the wailing had ceased. The people said that the Kita was tending him (*kita pausia*) and would not let him die, for the Kita could " make him small," but not kill him, so Rakoto hung up *malanjari* leaves above him " to make him die quick," for so long as the Kita " stop 'long Mbuko " he could not die. Anyone who passed under the leaves would dwindle away. At last he died. Njukili says the people were afraid. They hastily packed him up with a bundle of rags on the stomach, calico passed round the neck and under the knees to keep him in a sitting position, his shield and tomahawk were placed beside him in the canoe, and the funeral party paddled off with a quick stroke to drop him out at sea.

No charm was performed at his death beyond that described, and we were told that none was performed at Ngea's death either.

Normal burial was described thus :—things belonging to the deceased are broken without any ceremony. One says they do this because the deceased is cross and does " something no good " to the man who keeps them. Another says they are broken to prevent anyone from stealing them, but Njiru says they made the rings " no good " to be like rotting, their shadow (*galagala*) goes to Sonto. They also break the shield and spears, and cut down the betel vines of the deceased and take some of it with areca to the burial place. They make a line with lime across the

face of the dead from one side of the forehead to the opposite cheek over the root of the nose ; they deck out the corpse (*yambo*) in finery ; thus Widow Taru wore three arm-rings on each arm, red calico, blue tapa, beads, sweet smelling leaves (*riria*), though in her life time she was, as a widow, forbidden everything save brown bark-cloth. Men, besides their best apparel, have a bundle of dried *riria* leaves, which among the living are peculiar to women. They place mats on the ground, and blue tapa and calico and sometimes rings, wrap up the body, including the head, tie it round with the *kanda* creeper or a rope, swing it on a pole and carry it away to the "bush," as they say. But the "bush" seems invariably to be some unfrequented shore. Ngea's body was placed in a wooden framework, apparently called *era*, on a tree at Mbusamole on the north side of Narovo Bay. Other bodies were left on the rocks at the foot of the cliffs between Narovo and Ove. We knew of no case where the body was taken inland.

The funeral is termed "hiding" (*varigolomo*). It is carried out on the day of the death or the next one ; this probably depends on the time at which the death occurs. Ngea, Iraña, and Widow Taru all died in the night or morning and were "hidden" in the course of the day. If a woman dies in a hall, the corpse must not be taken out through that end which is taboo to women.

The funeral party hang on their necks leaves of *pepeu*, when they get into the bush, as a safeguard against the "Corpse Eating Spirit" (*Tomate Gani Yambo*), who will be described in a later section. These leaves are worn till they drop off. The body is placed in a sitting position with the knees drawn up, facing west ; broken shell-rings, shields and other belongings may be left beside the corpse, or in a special stone chamber called *era*, in another place, or on some shrine. The funeral party eat some of the dead man's areca-nuts ; then they stand in single file facing homewards, the man who went first on the way out standing last, and the last first. They break two young coco-nuts along the middle with a stone and hang them on a stick beside the body saying : "there is the *tipa* for you the old ghosts, the mother and father of the dead man, here is the *tipa* for you the new ghost, your provisions." (I.)¹ (This offering was described in Simbo.) There is no cast offering (*gonagona*). When they get home they break ten coco-nuts and drink them without any ceremony. They eat pudding and chew betel.

The bodies of chiefs were left in special stone enclosures called *era*. Rembo's was in Varingau on the weather side, Atolo had one in Pa Na Gunda, and Sogaviri's was in Masuru. The body is placed in the same position as a commoner's ; the head is propped up with sticks and appears above the wall.

Lepers are taken out to sea and dropped there like Mbuko. Foreigners, including slaves, are treated in the same way ; the head is not wanted : "he no belong this place." There seemed to be some doubt whether a priest who was a foreigner would

¹ The roman figures refer to the texts. These are omitted owing to the expense of printing, but are at the disposal of anyone interested in them.

be dumped at sea or not. The people of Roviana, Ganonga, are not treated as foreigners, but those of Vella-Lavella and Nduke are. Some men asked to be buried at sea ; Njiruviri says they " like wash all time long salt water."

Catching the Soul.

Either on the return of the funeral party or on the third day they " catch the soul " (*tekua galagala*) or " transfer the soul " (*vakarovia galagala*). Widow Taru's soul was caught in Tapurai on June 25th in my presence. Gila pitu went to get some *rindi* leaves and put them in his armlet (*tutupa*) and Kave went to get a small ring called *ovala* and introduced the stem of a dracæna into the hole ; he also adorned himself with *rindi* and went to take his stand outside with Gila Pitu behind him holding leaves of *njorutu*, *vonjamboe*, and *rindi* ; next Njoni followed by Pinju, both with leaves of *mbambo*. Kave held his dracæna out obliquely at arm's length, the others rested their elbows on their hips. Kave sang out "*Togambana !* come over to the dracæna." (II.) (He called the dracæna *mbambo* in this ceremony.) The leaf quivered, then the arm moved round by turns slowly and fast. We were afterwards told that the deceased (*tomate*) would not have him. At last he exchanged leaves and positions with Gila Pitu, who had no sooner taken up his station than his arm went round violently : he turned round and round as he advanced and then fell down, at which a woman exclaimed "*Sa mate*" (he has fainted). The others came up with leaves and Njoni pressed the small ring (*ovala*) on the pit of Gila's stomach ; whereupon Gila stood up and looked as if nothing had happened. A woman or two were in the house looking on ; otherwise the ceremony seemed to excite no interest.

Ragomo related to us how he had performed this office for Iraña. He stood outside with Njama, Hita, and Wavu behind him ; he held the dracæna and *ovala* in his right hand ; the left is taboo. The other three all held *njanjala*, *njamuru*, *vonjamboi* leaves. Ragomo cried out : " Irano ō, come over to the dracæna, to the *mbambo*." (III.) His hand went round slowly, the spirit was not in the leaf : "*tomate* he no want to go ; he want stop a bit long house." Presently he comes to the door and the medium tells him to pass on to the leaf. The spirit says : " All right " and the hand goes round ; the medium whirls about (*vinuvindulai*) and falls. While he spins round he does not know what he is doing : everything " walk about, all same man sick when he *vinuvindulai*." When Ragomo fell he had no breath ; he could not see or hear. As one man described it, " Wind he no stop, all same man he die." Minju put the leaf into the gable.

One informant gave the following invocation : " Come over to the dracæna, ghost ; be true in divination." (IV.) To revive the fallen medium the same informant takes the ring off the leaf, passes it down one side of the body from the forehead to the chest, then down the other side ; then he massages him, saying, " Go away, do not kill him, let him live." (V.)

After the ceremony the dracæna is folded round the ring and stuck in the gable thatch (*paŋgala*), there to remain till the eighteenth day. Such, at least, is the custom in Ove and Narovo. In Simbo, we were told, the ring and leaf are left on a sacred altar or platform (*ara tambuna*); one informant specifies the central post (*popo kevu*) of the dancing-ground (*kakambare*). They are left there for ever.

The leaf and ring are henceforth spoken of as "the soul" (*galagala*).

If a man is killed abroad they catch his soul when they get home.

The Widow.

The wife of a commoner appears never to follow her husband in death. She discards all adornments and wears nothing but brown bark-cloth. She puts no lime on her face or hair. She does not cut her hair till the Night Festival. A small enclosure called *kuipi* is set up for her inside the house; it is just large enough to lie in. We saw the one made for Ngea's wife. If the widow is a chief's wife she must be quite invisible and sit with her knees drawn up, like the dead, nor may she stretch them until a successful head-hunter blows the conch in the house. If a widow of a chief or commoner has to go out to satisfy nature she goes crouching under a mat. Food is prepared for her in another house; there is no restriction in diet; she may eat lime with betel.

A widow is no longer called by her name, but even her children address her as *namboko*. When she is spoken of her name is always preceded by *namboko*: Namboko Mali, Namboko Taru.

A widower is also *namboko*; but this seems to be more of a manner of speaking, for it involves no restrictions on dress, movement, or re-marriage; he is never spoken of or addressed as *namboko*.

Mourners.

Relatives may go into mourning; this is called *mbembesu*. Mourners do not cut their hair or lime it; they have "widow's hair" (*kalu namboko*). For a "small man" only the mother and sister go into mourning: a father may ask his sister to go into mourning for his child; in a case of the kind we noted that the sister kept her mourning till the final death feast. A grandmother, an uncle, or an aunt may take mourning too. It is only in the case of a "big man" that others go into mourning; for Muke, the late chief of Simbo, there were several, including Erovo, the future chief. The mourning seems not always to last till the final feast. In one case we noted a man mourning for his father desisted on the eighteenth day. It was said that a child refrains from washing four days after a death.

The Lykewake.

The wailing of the women gives notice of the death. Friends then come without waiting to be invited, and sleep in the house. They think the widow will be afraid of the ghost. If there is no room for them all in the house the overflow sleep in a

neighbouring house. We made lists of all those who came to the lykewakes (*kokomate*) and these show that all were somehow or other related to the deceased or his wife. Narovo and Karivara were represented at Ngea's lykewake. Ove came to wail, but not to sleep. Simbo kept away altogether.

There was no lykewake for Mbuko.

At the death of a commoner the women wail (*lukana*) and the men sing (*kerakera*) for four nights ; but the flute is not played. At Widow Taru's death only women wailed. The people chew betel-nut at intervals. At the end of the four nights the people go home ; some stay on, but they drop out at every feast. The last ones depart at the feast of Londu.

We inquired minutely into the subject of washing, but we could arrive at no certain conclusion ; it would appear that most people who attended the lykewake washed freely, except in the case of a chief, when they abstain till the fourth day. In the case of a commoner only a few abstain from washing. One informant stated that an equal number of men and women, from one to three, did not wash, we do not know for how long. At Widow Taru's death one woman abstained from washing for twenty-three days.

Counting the Nights.

The nights, not the days, are counted after a death. A knot is tied in a string for every night that passes. A Ganonga district man made a model with the *yako* creeper, every tenth night being marked by a big bead. The string is called *puku* or knot, and is kept in a diminutive basket. It is generally in the charge of some woman. Widow Mali kept it for her brother Ngea ; his widow could not, we were told, because she is no relation of her husband's. In fact she seemed quite ignorant how the nights were going, and the day before the ceremony of burying the string was to be performed was not aware of it. Iraña's string was said to have been kept by his widow, but Iraña was a stranger.

In Narovo they keep a string for commoners. In Simbo only for chiefs. No count was kept for Mbuko.

A Chief's Funeral.

On the evening of a chief's death they hang up the " sacred areca bunch of the chiefly dead " (*ure mate mbanara*—*ure* is a bunch of areca nuts used for ceremonial purposes). Nimu, the chief, hangs it up in *Simbo*; in Karivara, Kundakolo, who thus describes the rite : he hangs the bunch on a post of the hall (*paile*), then plucks a nut, saying : " I take down the bunch (*ter*), I take down the portion of the chiefly dead ; be not angry with us, be not resentful, do not punish us, do not fine us. Let them drink and eat, cook, drink water, break coco-nuts, open the oven, and let the children eat, let the women eat, let the men eat, and be not angry, you chiefly dead oh ! " (IV.) He eats the nut, then the people eat the areca, and also puddings, sweet yams, pork, and bananas.

Muke was set upon a box reclining against a post and exposed to view in the hall. Kera, his wife, sat down beside him arrayed in her best. People from the four districts came to wail. All night the men sang and the women wailed ; no one slept ; Kera did not cry or she could not have died, for a widow who cries cannot hang herself ; she kept smoking and eating betel nut. In the daytime they went to sleep in other houses, as they might not sleep in the hall. The Narovo people went home, the reason being that they were on bad terms with Simbo ; the other districts remained for the second night ; this was the last, so Kera bade them all farewell " Farewell, I shall follow Muke, you stay." (*Latu ve, ara ma tuti tu i Muke. gau mu suveri*). She ate a piece of tobacco as poison, but though she felt sick she could not die ; in the morning she tried again but failed. Then she went into a neighbouring house to put on a necklace, *riria* leaves, wrist bands (*okiti*), arm-rings, blue and brown tapa. " That is all, come let us go," she said (*Mbeto, aria ko ta riu*). So they set out to Varionda on the shore, and many went with them. The four coconut leaves called *ango* were placed on the head. Kave broke rings and placed them inside the enclosure (*era*) ; altogether they destroyed 20 arm-rings, 2 rings, 2 mounted orange-stained rings, 1 shell girdle (*mbutu*), 4 shields, 6 spears, 3 big boxes, and 1 three-man canoe. Kera then broke her own rings and ate a kind of drug (*pasapasa*) called *logoro* which relaxes the muscles ; no one saw the *logoro*, for it was hidden by Widow Mali, who alone knows about it and may not sell or give it. She then proceeded to hang herself with bark-cloth (*elava*). Ngea held her up while she tied the cloth to a branch ; no noose was made, but two knots so as to fit on each side of the throat and squeeze it between them. When Ngea let go, the branch snapped ; so Widow Mali and Widow Pondo held up both ends of a pole, and Kera hung herself in the middle. They then made an enclosure (*era*) and put her in. Having accompanied her husband to the grave she was not entitled *namboko*, like those who survive their husbands, but *uñgi*, the expression *uñgi tuti* (*uñgi*, follow) is also used ; this term is specially reserved for women who die to follow their husbands, *lovorua* being the general term for hanging. Men do not *uñgi*. Formerly they used to kill a slave at the burial place (*era*) in honour of the chief ; this was not done for a commoner ; the body was thrown into the sea, but the head was put with the chief's body.

On their return from Muke's funeral they caught his soul. Many men took part, holding leaves of *njanjala* and areca ; Kave, the chief of Ove, held the dracæna and the ring.

Muke's lykewake (*kokomate*) lasted one hundred nights ; some nights they sang, others they slept. In the daytime they went about or slept in another house ; they were free to bathe.

The Fourth Day.

On the fourth day a feast is held. It is called *vamande* or " to make four." We attended Ngea's in Olepeninga on May 28th. The feast was given by Ondaite as brother to the deceased. Six pigs were cut up out of doors, then cooked with

bananas and *neka* leaves inside Sogaviri's hall. The oven was opened in the afternoon without any formality ; the guests immediately fell to eating such parts as the head and shoulders, the rest of the pig being divided into portions by the women ; we could not get an exact account of the shares, but there appeared to be one for the men and one for the women of each village, except the people of Simbo who did not attend ; besides each person present seemed to get a portion. The widow got nothing ; she had her own food cooked at home, at Le'ana Kotakota, and she might not on that day eat of a domestic pig cooked in a hamlet, but only wild pig cooked in the bush.

Ira'na's Fourth Day was held on July 9th ; probably he really died on the night of the 5th and that night was counted. His children killed two pigs for him in Ove, and Lembo, his kinsman, killed one in Marundu in Narovo.

Widow Taru's fell on July 26th.

At Muke's Fourth Day twenty pigs were killed.

We observed nothing on N'gea's Fourth Day beyond what has been described ; we were told there was nothing more. On my second visit, however, Kundakolo gave away the secret ; armed with his clue I was able to extract the most important rite of the day out of the unwilling Njiruviri.

Two puddings are made of four times four sweet yams ; this was demonstrated with stones for sweet yams, so that it is four lots of four, not merely sixteen. Either pudding is wrapped in leaves of *sinu* and put into a basket. After the mothers have removed the children for fear they should make a noise, the man who officiates puts on a stick a bit of pudding known as "the head of the pudding" (*mbatu yamu*), and utters amid complete silence the prayer entitled *Pito N'Yamu Tambuna* or "Speaking the Sacred Pudding." The "head of the pudding" is then rubbed on any kind of tree for the spirits (*vendi tomate*). One pudding is for the elderly men and one for the elderly women, but it would seem, from what was said, that only one old man and one old woman ate. The peels of the sweet yams, the leaves in which the puddings were wrapped, and the *piro* leaves that served as plates were put away in the two baskets until the thirty-sixth night.

In Narovo there are two forms of the "Prayer of the Sacred Pudding" in use, according as a pig has been killed in honour of the deceased or not. If the relatives cannot afford a pig the prayer runs : "Put your basket on your head and go to Na Mbogusu ; put your basket on your head and go to Na Mali ; put your basket on your head and go to Narisuni ; go to Patu Manja Pa'ngala." (VII.) Such are the words for a woman ; for a man they say, "Shoulder your club." The last word, *vatogea*, is shouted ; it means "sit down" in the language of ghosts (talk belong *tomate*). When the prayer is said, the deceased, leaving the roof, will go to stay in Patu Manja Pa'ngala or the "Stone Smitten Asunder," a broken rock that lies near Mbulolo, and about which there is a legend. It is forbidden to step over this stone, but there is no objection to visiting it, even when a ghost is staying there.

This prayer was told me by Njiruviri out of hearing of anyone else. For the other form he referred me to Vigu, professing ignorance. Vigu, however, was hard to follow, so his text is imperfect, but it was revised with the aid of Njiruviri who in the end confessed that it was he who had taught Vigu for a fee; he had himself learnt it from Rembo, free of charge, by dint of repetition. The translation, as far as it is possible runs:—

“Set out, you people of Gele, you people of Lavalava, you people of Vonjavonja, you people of Elosana. Go up to Aku, launch four chiefly sticks; go down to Yombāvuru, launch four chiefly sticks; go down to None, launch four eel boards, launch four embracing nights; cast out four hawsers; shout people of Gele, shout people of Lavalava, shout people of Vonjavonja, shout people of Elosagana; let him come down sounding the conch, come down casting . . . ; come down casting; go off to Mala Kinda, scoop the water four times¹; go off to Mbulolo, scoop the water four times; go to Kokorai, scoop the water four times; go off to Patu Lavata, cast four hawsers; go to Kusui, scoop four times.” And so on till they get to Inda Tigetige, then it continues. “Go off to Patu Lanolanono, launch four; go off to Rerai, launch four; go off to Patu Gele, go off to the deep sea, backstroke; go off to Lolo te Pome, backstroke.” And so on to Toi Poroporo; then the prayer ends. “Go off to the Stone that sits; to the stone that . . . there sit, and wait till Londu, that they may take you to go to Sonto.” (VIII.)

The prayer is full of symbolical language and requires a commentary. The opening word *vagoregorea* is “to cause to come down in numbers”; it is here used ceremonially (*varavara*) for *Ŋgāngiri*, “to set out.” *Aku* is the *varavara* name of Pa Na Kōngu, *Karivara*; the “four chiefly sticks” is a periphrasis for canoe; *gata* also appears to be ceremonial, for it was given as the equivalent to *aŋga*, a hawser; it was explained that when the spirits anchor the canoe, all the spirits in the mountain see them and raise a shout. *Kombi* is “*kaikai* belong *tomate*”; *soke* is also food. *Patu lanolanono* is inside the cave at Tusinai; our notes say it is a canoe, but it should be the log on which the canoe rests (*lanono*). *Sangoro kolekole* is ceremonial for to pull back, to turn back. *Toka* and *Maŋge* are stones at the entrance of the cave on Patu Kio. We shall here give Njiruviri’s epitome of the route followed: “They start from Tivorai, take a canoe at Panakōngu, another canoe at Ou in Simbo, another at Yombavuru and None; the people of Lavalava shout and come down to the canoe; then they skirt the coast outside the reef.” They begin, therefore, in the north of Narovo, go by sea to Panakōngu in Karivara, call at Simbo island on their way north, paddle along the weather side, round Tapurai southwards into Narovo Bay, across to Panjale, and along the steep cliffs between Narovo and Ove to Rerei and go back to Tapurai outside the reef; the spirit goes and waits in Toi at the entrance of the cave (Pa Na Keru). Njiruviri thinks there are no ghosts in Toi,

¹ In bonito fishing they scoop the water to make a thud that apparently attracts the fish.

but that it is only a figure of speech (*varavara*) ; so also is their embarking in canoes. Without the prayer the spirit cannot go off to Sonto later, but haunts the native bush.

Ove and Karivara have a different form of prayer, "another speak." In Simbo no one knows it, so they get Pore of Karivara to recite it. The Ove dead go to Tusinai, those of Karivara to the cave on Patukio. In neither case does it make any difference whether a pig is killed or not. Not everyone in Narovo knows that the soul goes to a different place according to whether a pig is killed or not ; two of our informants appeared not to know.

Teku Vavolo.

Shortly after Ngea's Fourth Day, Lembu, the Ganoigan, returned from Choiseul with a little captive (*pinausu*) whom he had bought. He landed with the ceremonial used on a return from a successful raid, and on landing went straight to visit Widow Emele in Pa N'Embala preceded by a man blowing the conch. Lembu, it was said, blew the conch inside the house, then removed the door of the enclosure (*kuipi*) inside which Widow Emele was confined. She paid him two large rings. There was some difference of opinion whether Lembu replaced the door or not. Widow Emele said he did not ; Lembu said he did, but he added the door had been put in when they heard him approach. Possibly both are right ; possibly the people have become so lax in the observance of these restrictions that the enclosure was left open until Lembu was heard approaching ; it was then set up merely in order that he might remove it and put it back again, after which it was dispensed with. Certainly there was no door when we went to see.

Lembu also blew the conch for Widow Gage, Iraña's wife. He opened the door and wept, and she wept also. Then he closed the door. She gave him nothing because Lembu and Iraña were "brothers."

The custom seems to be decaying since head-hunting has been stopped. An ancient example is therefore of interest. Homu, as brother of Malivi, the chief of Simbo, was noble (*mbanara*), so, when he was killed and eaten in Ysabel, his widow remained two hundred nights in the enclosure (*kuipi*) with knees drawn up (*tongo polo*) ("now no all same," remarked Njiruviri, "man old time he savvy *tongo polo*"). Roviana blew a conch for her ; she opened the door and came out. Had the men of Roviana not come, the men of Simbo would have gone to catch a head, so that they might blow the conch and open the door. We asked what would happen failing that, and they said the widow would wait another hundred nights and "come out nothing." We asked why Widow Emele did not come out. "Because," they said, "the death was too recent." She came out on the eighteenth day and would have come out then in any case. An Ove man explained that this conch blowing propitiated the ghost, "make him good 'long *tomate*" ; then when the ghost speaks, he speaks the truth, he cannot deceive them in divination, "he speak true, he no savvy gammon 'long *nanasa*." We were also told that a chief's wife would be

allowed to stretch her legs after the conch was blown. Presumably this only holds good if it is too early for her to come out altogether.

The name of this rite is *teku vavolo*. *Teku* means to take, and *vavolo* is the name both of the last death-feast and of the great war-feast.

The upshot seems to be that a head or a captive taken in honour of a chief sets his widow free; he will not be angry at her release, but continue to give true oracles. If the death is too recent the confinement is merely mitigated. The confinement of a commoner's widow is so short that the taking of a head is a mere form in her case.

Bleaching the Skull.

After a dozen days or so they go to fetch the skull, "to take the deceased," as they say (*teku tomate*). The period is variously given at twelve, thirteen or fourteen days; for Iraña it was nine or ten (June 15th).

Any man may fetch the skull. Some chew the drug called *pasapasa* before doing so and spit it all round; this causes the Corpse-eating Spirit to run away in fear. Others use no charm (*tambu*). Iraña's skull was left on a rock on the shore at Patundona. We saw Ōgea's on a cleft pole on the beach at Mengi. The skull is left to bleach.

Bathing Feast.

After fourteen nights comes a small feast called *Ogono* or Bathing. They wash before sunrise in the sea (never in fresh water) and feast on sweet yams, bananas, *neka*, and clam (*moso*), if they can get any. The widow does not partake, but receives food cooked in another house. Widows Titi and Nanta did not bathe at Ōgea's bathing feast, but kept up the mourning. Among the mourners for Muke only the men of Ove and Karivara bathed on the fourteenth day; the men of Narovo had gone home after the first night, and those of Simbo went on till the hundredth.

This feast was not held for Iraña because he was a Ganongan. It is not held for men of Roviana, or for men killed abroad.

The Eighteenth Day (Akesage).

The eighteenth day is *Akesage*, from *ake* to carry in the arms, and *sage* up. It is the day on which the skull is put in the skull-house, a proceeding called *vatome tomate* or "putting in the dead."

All informants but one gave eighteen nights as the period. In point of fact Ōgea's was held on June 10th, which makes sixteen, but they may have conspired to hasten it in order to elude us, for they feigned ignorance of the time it was to be held, until it was actually over. Iraña's was held after twenty-two nights, but his people were following the Ganongan reckoning of twenty days; so they were only two days out.

Iraña's son removed the skull from Patu Ndoña without any charm, and brought it to Pa Na Gundu wrapped up like a pudding in ivory nut leaves, and hung it on a *vonja-mboe* tree. He also brought the leaf and ring from the gable thatch. There were seven people present including Soge, the mortuary priest (*iama*). A fire was lit with matches and while the sweet yams were cooking Lembu unwrapped the skull, and tied the lower jaw to the cheek bone by means of a creeper called *lave*. He fitted two small rings (*ovala*) of the kind called *kapu lembu* into the orbits: he strung three more on a bit of *lave* and placed them over the eyebrows like a diadem, tying the ends of the creeper to the cheek bones. Soge, the mortuary priest, took the skull and put it into the skull-house. The leaf and ring were placed underneath the skull. He then pounded up nuts and sweet yams and out of them made four diminutive puddings wrapped up in pieces of *sinu* leaf and tied round with a creeper called *roko* (as in Pl. IX, fig. 1). These puddings were tied together in pairs and hung on the roof of the skull-house, one pair at either end. These miniature puddings are called *popo rai* or *popo rae* from *popo*, fontanelle bone, and *rai* or *rae*, forehead. Soge then kindled a fire on the stones at the foot of the skull-house and into it put some of the pudding (as in Pl. IX, fig. 2). This is the usual method of burnt offering which will recur again and again. Soge ate the rest of the pudding and sweet yam; then we all ate pudding and adjourned. The whole proceedings were very informal; there was no shadow of sadness or solemnity, but it was more like a picnic.

It was afterwards explained that the Ganongan practice was followed in some details; in Eddystone only a chief's jaw is tied; in Ganonga it is done for great and small; the tying of small rings on the forehead is not done at all in Narovo. Soge ate the remains of the pudding offered up because in Ganonga "one pudding belong *tomate* and *iama*"; in Eddystone he would receive a separate pudding.

Njiruviri's theory of burnt offering is this: "S'pose you lose him 'long fire, *tomate* savvy eat him; all same man he stink he rotten, bymby he go Sonto, s'pose you lose him small pudding *tomate* 'long Sonto savvy eat him." A Lungan objected to burial in the ground because a buried man can't eat pudding, whereas if the head is in a skull-house he can.

If the skull is a chief's they kill a pig. At Muke's *Akesage* they killed one, but made no sacrifice. Kainyira, who is mortuary priest in Simbo, put in the head and with it the soul-ring, but not the *dracæna* leaf. Muke's jaw-bone was tied, one small ring was placed in each orbit and one arm-ring over each ear; these arm-rings are called ears. The skull was placed on an orange-stained ring called *mbulu mate mbanara*. When the skull had been put in the people came up, and all those who had small rings (*ovala*) gave them to the mortuary priest to put into the skull-house.

In Narovo, Rembo says a certain prayer whilst the priest holds the chief's head before putting it in. Kundakolo says the prayer in Karivara. We take it that this is the prayer which Kundakolo dictated on one occasion, for the expression "take

up the chiefly dead ” can only refer to the ceremony of putting in the skull. If that is so, Kainyira may not have offered up any pig at Muke’s death, but some one else must have done so, for Kunda says that when he says this prayer he puts into the fire that part of the pig which is called *kurukurumu* together with some pudding. The prayer runs : “ Offer pudding, offer pig to you, the ghosts, be propitious, be propitious in war, be propitious in the sea-fight, be propitious at the net, be propitious in bonito fishing, be propitious at the landing of bonitoes, be propitious at the coming down, be propitious at the fort, be propitious in sickness, be propitious in the burning of thatch, I say ; take up the chiefly dead, and be you propitious and smite men, oh ! ” (IX.) The meaning is “ Grant us to fall in with enemy canoes at sea, to surprise them at their nets or spinning for bonito, to cut them off as they come down to the shore, to take their fort, to find sick men at home, to burn their huts.”

If a man’s head is not forthcoming it is represented by an upright stone called *ngele*. Mbuko was represented by a stone ; lepers also ; but not men fallen from trees, nor women that have died in childbirth. These stones are not hewn but set up as they are to be found in Patu Lembu : they are generally long stones, more or less square in section, sometimes broad and flat, but always angular. They appear on all shrines and beside many skull-houses. Occasionally a wooden head is set up instead : one man was represented by a figure-head of that familiar prognathous type which in Eddystone is called *nunjununju*. In Uelai we saw a head carved in stone and representing a native of Ontong Java ; although a foreigner he was represented by a stone because he was “ good fellow-man ” and worked hard for the chief in Uelai (Pl. VII, fig. 1).

The stone is set up on the eighteenth day. The process is called *vatigoro*, to cause to sit. The ritual is the same as for a skull, only they do not hang up miniature puddings (*popo rae*). The soul-ring is tied on the stele, but the dracæna is left on the altar. Njiruviri’s theory of stone substitutes is that the soul (*galagala*) sits (*tigoro*) on the stele when they make burnt offerings in order to eat of it ; such stones are not as good as heads because they have no mouths. They are sometimes referred to as *tomate patu*, that is, “ stone ghosts.”

Akesage is also the day on which the widow is set free ; she pays arm-rings to her husband’s relations and washes for the first time. At the time when “ fowl sing out ” the people present make themselves belts of the bark of *mbambagea* and *mata siso*, plants which had been gathered and hung up to dry overnight. A form of words is used when they are put on. Rembo knows it, but Hembalu, who officiated at Ngea’s *Akesage*, being a young man, did not know the prayer, so he merely shook the girdles and gave them out. Widow Emele washed with two other widows who were keeping her company, in the brook at Pa Na Nyonyoro (fresh water is the rule in Narovo, but in Karivara they have none, so they bathe in the sea). When they had finished bathing Widow Nanja made a girdle for Widow Emele out of the bark of

loku in order to prevent sickness. In the afternoon they cooked sweet yams, *neka* and bananas. The widow did not partake.

The other districts use leaves of *njamara* and *patuma* at the bathing.

The Soul's Departure.

The next event is the *Londu*, which means "to sink," "to set." The best informants give the period as thirty-six nights; thirty-six actually elapsed till Ngea's *Londu* on June 29th; lastly, that number gives us thirty-two days from the Fourth Day Feast, and thirty-two is the number of sweet yams used for the two sacred puddings which reappear on this occasion, and which seem to have been meant as provisions from the fourth day to the soul's final departure.

Ngea's *Londu* was held at Lenana Kota Kota, his wife's place, because he died there. Widow Mali made some pudding, "time fowl he sing out"; it was eaten at sunrise, but the widow did not partake. Two baskets containing the wrappings of the pudding were set aside. In the afternoon a little feast was held which I attended; it consisted of bananas and of clam mixed with sweet yams and leaves of *ande*, seasoned with salt water and cooked in hot stones. The widow did not partake or Ngea would have made her "sick all over." She helped, however, to prepare the food. When the feast was over they took four baskets, the two that had been kept over from the Fourth Day and the two that contained the wrappings of the morning's pudding. A married woman kindled a fire at some short distance from the house and put the baskets in. Widow Nanya stood beside her and intoned a wail, Widow Emele from within the house began the musical wail characteristic of the women, and worked herself up till she broke out into half-musical cries and sobs. Widow Ngeole accompanied her in an undertone. The wailing stopped suddenly when the baskets were quite consumed, and she was soon busy with household affairs as if nothing had happened. It was said that when they burned the baskets, Ngea went off to Patumeka to embark for Sonto. Njiruviri's theory was that as Ngea's body rotted so did the baskets in the fire. "Ngea he lose him; he put basket 'long fire, he lose him too." He also inclined to think that Ngea took the shadow (*galagala*) of the basket to Sonto.

At Muke's *Londu* they cooked bush-turkey's eggs, bananas, sweet yams and *neka* leaves. Widow Taño Puso burned two baskets only, according to the Simbo custom. The burning is always the duty of a widow.

From this day on the widow can again eat food cooked in the house. The last of those who came to sleep in the house depart and there the matter usually ends, and so it ended for Muke and Iraña. Sometimes, however, a meeting is held that same night at which Kundaite summons the ghosts that have come from Sonto to fetch away the newly dead to speak in public. This performance is called *kuri*, and the reason of it is that people want to hear "talk belong *tomate*" before they die. Kundaite can understand but not speak their language.

As there was some doubt whether Kundaite would perform for Ngea we offered him ten sticks of tobacco as an inducement. We all met in Ngea's house. Kundaite sat near the door in the side of the house. The lights were put out. It was impossible, therefore, to take notes, but immediately the performance was over we put down all we could remember and understand, and next day catechized Kunda.

Kundaite, when all was dark, fell into a sleep and dreamed he was in the land of ghosts. He met two ghosts in his path; they were old ghosts with no lime on their hair or faces, with no rings or beads, nor any calico, for they had died before the advent of the White Man; they wore the blue and brown bark-cloth in which they were clad at death. They had long white beards down their chests. They stood by the path at a place where there was a rock and two palms, one a king coconut (*inda mbaña*), the other a "green coco-nut" (*inda mbu*). They said to Kundaite: "Do not come here; let us go back to your country." They added that they would let Onda, his uncle, know, and bid him come. Kundaite came home and awoke, but the two ghosts remained behind and looked up the other ghosts in order to bring them to Leñana Kotakota. Kundaite then put some tobacco in the fire (he told us he usually burned turmeric (*año*) and *kuruwēte*). The ghosts came in two canoes; they made a halt in Nakasa, an uninhabited island one or two hours distant from Ganonga; they set off again, passed Rokombuna and landed in Uelai. This is wondrous fast, but "he *tomate*, he no man." In the meantime we had been waiting patiently at Leñana Kotakota and nothing happened; some one suggested the ghosts were afraid of a dog that was lying under an areca palm. At last there was a whistling: it was Onda's ghost; the way they knew who it was, was by calling out the names of deceased persons till the ghost whistled "yes." After the first whistling there was a long interval and a discussion about the White Men from England. Onda said, "Why do the White Men want me to come? I can't see (? recognize) them; I have never seen a White Man." "The White Men want to hear the spirits speak," said Kundaite. Misu came after Onda and said he had come to take Ngea to Sonto. Pilu, Kundaite's sister, came and spoke words to the same effect. Kundaite's father came and asked for tobacco; his son put some into the fire saying: "Here is the tobacco for you, Kunda; smoke and depart." (X.) Widow Rupe, Ngea's mother, followed; she said she had come to fetch away Ngea. Ngea came next: the ghosts picked him up in Patumeka and brought him along. Widow Emele wailed for her husband, but he said: "I am going for Sonto, do not cry." (This was not consistent with what Kundaite had previously told us, that he would not be able to speak, not having yet learned the language of ghosts: "This time he all same small fellow piccaninny.") Rome said: "I have come to see Ngea; let him blow the conch and come to Sonto." The women asked who would fetch Widow Taru away, and he said Nangu would. He was told the White Man wished to hear their language. "Yes, I see," he answered. When Tule came, Widow Emele wailed again. Widow Mbimbolo then sang and her daughter, Widow Emele, wailed.

"Do not cry," said the mother, "I want to take Ngea away." Kopa announced that he shared a boat with Nui: they cut copra in Sonto and with it bought a boat from a White Man's ghost; he had left Nui behind to look after the boat. Kopa was next. Mamana, his son, said to him, "Me man, you *tomate*, me no like you, me no want to speak long you, you go away." Meva spoke and Widow Totogo, the daughter of Widow Mbimbolo, whistled a wail and bade them farewell. The ghosts returned to Sonto, stopping at Nakasa on the way. Ngea blew the conch at sea and also as they approached the shores of Sonto.

Life in Sonto.

Sonto appears in lie in Bougainville, for Bougainville men are described as Sonto men, and armlets from the Shortlands as Sonto armlets. There is a volcano there. Ghosts go there from Eddystone, Ganonga Island, Roviana, Vella-Lavella, Choiseul, and Sonto; they seemed uncertain whether White Men's ghosts went to Sonto or to a Spirit land of their own. The abode of the ghosts is a big cave in Mbombombelo. They sleep in the daytime and go about at night; for day is like night to the ghosts. There they work and plant; Sonto men tell how they have heard, but not seen, the ghosts working; old men have seen them building canoes and cutters. There were lots of ghosts about the bush in Eddystone, but they are "'nother kind"; those who live in Sonto cause no sickness, only Ave does.

Sometimes the spirit of a father or mother turns into a butterfly called *mbembe tomate*, or "spirit butterfly," and comes to settle upon the head of his child. "Oh! a spirit is on your head," the people say.

The Fiftieth Day.

The fiftieth day is often the closing feast for a commoner. When this is the case the counting string is buried on the previous day; at the same time they "put in the basket" (*vatome mani*).

Mata Singala decided to hold the final celebration for Ngea on the fiftieth day, because a Night Festival would have been too great an undertaking, "he too much work," and he had not got much money. The string was therefore buried on July 14th, which makes fifty-one days. I attended the ceremony at Ngea's skull-house on the north side of the bay. There were four natives present, including Soge, the mortuary priest. The growth round the skull-house was cleared away. Soge hung up a basket belonging to Ngea on a *vonjamboe* tree. He then dug a small hole in the ground and taking the counting string (*puku*) from its diminutive basket he put it in and planted over it a germinating coco-nut. When the palm grows people will say: "Puku belong Ngea." The fruit of the tree may be eaten. An areca nut is sometimes planted instead. Then Soge put Ngea's basket into the skull-house; he then took some plantains of the kind called *vundi vaturu*, which the others had cooked in the meantime, pounded them with nuts in a small wooden mortar, and

wrapped it in a leaf of *sinu*. He then put the mortar back into the skull-house, unwrapped the pudding and put some on the fire, muttering as he did so. He tied the wrappings on a *vonjamboe* tree. He then ate some plantain and some pounded nuts; this, I was told, represented the "first pudding" (*yamu vakenu*), which is eaten by the priest. The whole proceedings were, as usual, quite informal and everyone busied himself with one thing and another while the priest carried out his duties.

The Fiftieth Day (*Limañavulu*) was held next day. I counted the knots in the string before it was buried and there was exactly fifty. Probably fifty days are counted and the feast is held as soon after the full tale is complete as is convenient. Mata Singala gave the feast in his hall in Mbetapiro about three in the afternoon. It was held there because it was Ngea's place, whereas Lenana Kotakota, where the Washing Feast and the Londu were held, is his wife's. There was a large attendance. The widow may be present. The fare was pig, sweet yam, bananas, *neka* leaves, bread-fruit and kanary nuts.

For Muke's Fiftieth Day they had puddings, cooked eggs and ten bonitoes, one of which, called the *tititali*, was offered up at a bonito shrine, and another at Muke's skull-house.

The Fiftieth Day is kept for men killed abroad.

The Hundredth Day.

Muke's counting string was kept one hundred nights. After that they ceased counting and the lykewake (*kokomate*) also ceased. A feast was then held, called *Vavagoto* or "Keeping the Hundred": they ate puddings and one pig. The people of Simbo went to stand in the sea, and a woman dipped leaves of *njorutu* and *vonjamboe* in the water and sprinkled them all; she accompanied this action, which is called *iru*, with *tambu* talk. She would not reveal them. In Narovo they use the same leaves, adding *vonja poka*.

The Night Festival.

For a chiet or a man of note the final feast is called *Vavolo*. It shares this name with the great war feast. In head-hunting days the two celebrations must have been often, if not always, simultaneous; for a head was captured in honour of a dead chief: they would thus celebrate a victory and commemorate the death at one and the same time. This final festival is also described as *Mboñi* or Night, and the people were said to "hold a night" (*taviti mboñi*).

Some give the period as one hundred nights, some as two hundred or even two thousand. It stands to reason the period could not be fixed, since it would await a successful foray; nowadays it doubtless waits upon abundance of money and food; it is also the custom to honour two or three dead in the same feast, so that the period could not be the same for all: thus Muke and Mbeimbuko, two late chiefs

of Simbo, shared one Night Festival. Naturu, late chief of Karivara, shared one with a child and a third person.

We were misled as to the night of Naturu's feast, and turned up the morning after; Muke's was held while we were away. So we must be content with hearsay.

Preparations begin a long time in advance. A batch of grated (as opposed to pounded) puddings is baked three days running, to prevent their going bad; then another is baked, and so on, until enough have been accumulated for the concourse of guests from the whole of Eddystone and from overseas. One man directs the feast, but the whole group of "brothers" (*tamatasi*) contribute rings to pay the expenses. It appears that a chief might be induced by a present to take upon himself the burden of a feast, for Nonembela, having lost his son Runi, gave Kave the chief two rings to get him to hold a night; those two rings would not cover the expense. Runi, it must be noted, was of noble birth and related to Kave.

We have it on the sole authority of an Ontong Java man, resident in the island since boyhood, that burnt offerings are made for sixteen days before the feast. If a Night Festival is to be held, the counting string is not buried on the fiftieth day, but kept till the eve of the Night Festival, or, rather, if we understood right, the eve of the night before. The basket is also put in on that day, and a pudding of sweet yams and nuts is offered up with the words: "Here is the pudding for you the spirits; let me not be ill, not be sick; tend us." (X.) A pig is killed and the organ called *opotia* is burned with similar words in the common fire (*iku paparagu*), not in the sacrificial fire. A small grated pudding is also eaten, but not burned in sacrifice.

Hana, the son of Mbolana, the old chief of Karivara, gave the feast in honour of Naturu. To it came one large and one small canoe from Simbo, one from Karivara, two from Tapurai. Only one Narovo man was present, because he was a flute-player and the husband of a Karivara woman. During the night they prepared food, including a pig. Rings, shields, clubs, and spears were hung up in the house; these were not shaken during the night, as is done in Roviana, nor was any whistle blown. When night came some women wailed, then three men sang to the accompaniment of two flutes. Then there was an interval during which the people ate pork and chewed betel. The music resumed: After a time the people of Mbarutu distributed pork, rings, and tobacco among the musicians and the chiefs. After that the music went on till dawn, when five pigs were killed, cut up, and distributed among the guests. We arrived as these were departing, and found Naturu's widow having her hair shaved off, after which she handed to Hana two orange-stained rings provided by her father Rembo. Kundakolo, one of our best informants, explained that these rings were "pay" for the hair. The hair is hidden in the bush, not buried, yet carefully concealed, for if a "brother" of the deceased were to find it he would place it on one of the Leprosy shrines or Madness shrines that abound in the bush (Pl. VIII, fig. 3); the widow would then become leprous or mad, become "no good," and be unable to marry again. Hana, however, "he got pay; he no sorry

take him." The same informant, however, adds that if no rings were given, Hana would be cross because he had not been paid for his trouble in making a feast; another informant gives the same interpretation. It is possible that these rings serve a double purpose, but Kunda's is the more likely explanation, as the other is just such a one as might be imagined by the ignorant.

The feast was also partly in honour of Wavu's child; his sister had gone into mourning for it and had her hair shaved at the same time as Nāturū's widow. We have no record of any payment on her behalf.

A second night festival was given in honour of Nāturū by two brothers in Karivara. They built a special cook-house (*vona kavu*) for the purpose.

Muke and Mbeimbuko's Night was attended by Hangere, the Simbo chief who lives in Roviana. Narovo abstained on account of strained relations. The hosts were Nimu and Rondi, Simbo chiefs. Whale's teeth, shell-girdles, rings, plumes, and so forth were hung up in the house. They killed thirty pigs, and every Eddy-stone chief and some distinguished persons received a head; the Narovo people, though absent, were included in the distribution. The puddings numbered one thousand. The singers received arm-rings and tobacco; Nimu was one of them. The chiefs present also got rings, Hangere five, Hana and Kave three each.

The Night Festival is held for people killed abroad.

A curious ceremony was held before a Night Festival in honour of two Narovo men, before our time. Muke came in warlike array at the head of his men; Rembo met him and offered him a large ring which Muke refused; Rembo offered him an arm-ring: he again refused it; finally he accepted some kanary nuts and entered the house. Informants offered an explanation, which had to be so patched up to avoid inconsistency that they were certainly wrong; it is possible they were concealing a breach between Narovo and Simbo of which this ceremony was the peace-making.

Sakoto.

If a man has been killed abroad they hold no Fourth Day, but a feast called Sakoto instead on their return. "They cook a pig; they have a sacred pudding, no prayer."

Foreign Influence.

Kave had the boy Ruri's body put into a coffin, which was laid on some stumps close to the house in Tapurai. Kave said: "No good he stop 'long bush," for he was a boy of rank (*komburu mbanara*) and would have been a chief had he grown up. After ten days they removed the body to Tui and took off the head. His umbrella, saucepan, shield, and tomahawk were placed on a bonito shrine. His mother went into mourning (*mbembesu*) and cut her hair at the Night Festival.

The keeping of the body near the house was said to be "fashion belong Lunga and Ganonga." The coffin is evidently European: there was a New Hebrides teacher in Tapurai. He once obtained that a Lord Howe Islander should be buried in a coffin.

The Legend of Patu Manja Paṅgala.

The ghost of the man for whom no pig has been killed on the fourth day goes to *Patu Manja Paṅgala*, or "The Stone Smitten Asunder." The legend was told by Widow Sanele, first through an interpreter, then directly in the vernacular. (XI.) The two versions are combined; the obscurities are due to the widow's nervousness.

There was an old woman in a cave. They (her relations) had abandoned the old woman. "Come, give me water to drink." There were two brothers in Tovutovu.¹ "Come, give me water from Mbolema," she said. Two went to get water and two stayed behind; the two men went to Patu Lomoso to get water. "Here is a bottle," said the two brothers, "drink." "Take me, two brothers," she said. They went up, they carried her on their backs, went down to the house in Tovutovu. They took her and made her sleep in the house. They held her and gave her sweet yams, they gave her bananas, they gave her small kanary nuts, they gave her large kanary nuts, they made pudding for her, they fed her and she revived. They warmed her at the fire and the ugly old woman became strong; they went down, two men and two women, to Mbulolo with a big bamboo to get water, and they bathed her and they put her to sleep in the house and the old woman revived. She remained in the grot at Patu Lomoso. They bathed her again; the old woman drivelled (?) and they wiped the old woman's mouth. They bathed her and the old woman was strong, and she sat up. "You four have restored me," she said.

The people of Vairiko made a war festival (*vavolo*). They made puddings, grated puddings, and slew a pig. The two brothers of Tovutovu went down to get some food. "Which way are you going?" said the old woman. "Very well, come and put on your finery. Do not go by canoe, go by the path." So they went down to Vairiko, they went to Mbulolo, walked round to Riguruna and Nyou. They went overland to the dancing ground. The two youths went and blew the bassoon. The scaffolding tumbled down; they blew the bassoons, one side fell down. They danced; the women, some of them married women, saw them and loved them; some men were angry with them. A chief's wife went to wait on the way. The brothers received pig and pudding and set out homewards. Then they came down half way. The chief's wife lay hiding. She came up to them: "Where are you going?" they said. "You are a chief's wife; go home, we came to get food, we do not want a woman." The two brothers went off and the chief's wife followed. They came down to Nyou; they followed the shore; they went up to Mbomba.

¹ *Karu tamatasi* may mean "two pairs of brothers and sisters." The pidgin version has four people, two men and two women.

"There were two youths," said the old woman, "now there are three of them," said the old woman. The chief's wife went along; she was in love, she wanted to marry. Then they went up to Mbulolo and ascended to their house in Tovutovu. But the people of Vairiko were angry. "They have taken the chief's wife," they said. "Come, let us go up," they said, "let us club, club to death the two brothers," they said. The people of Vairiko came to Ombombu; plenty came to kill the brothers. They made clubs: "Look out," said the old woman. "The people are coming," said she. "Go and get a dracæna; make a knot in it," she said. "Go to the point, wave it, scatter away the people of Vairiko." They went up to the Stone Smitten Asunder, and they smote the stone; they broke the stone asunder; then they went down again to Vairiko. Then they went up to the mountain.

Pa Na Keru.

We made an excursion to the cave of the dead on Patu Kio. The path goes up to Mbolema, a small level near the top. On the way we put leaves of *nanja koka*, a charm for mountains directed against the "spirits of the mountains" (*tomate soloso*). The cave itself undermines the high rock wall of Patu Kio. A short but steep ascent leads down to the entrance. Purana led the way, throwing stones ahead of him to frighten away the spirits, as Njiruviri explained, else a man would fall ill. The entrance is spacious; on the wall are some hardly visible marks called ghost's marks (*kutikuti tomate*); next to it a flat boulder called ghosts' seat (*tongotongo tomate*) where a "new ghost" sits; beside it a little further from the wall is the seat of the "old ghosts." The "new ghost" sits down and scribbles (*kutikuti*) on the stone. Narovo people go up to see the marks of a new ghost; when they went to see those left by Ulese, Manjini's brother, they found a drawing "like a boat" (*kwaka*). "All old fellow *tomate* come and look new *tomate*." Njiruviri was unable to explain their presence and why they were not gone to Sonto. Alembule declared that none but local spirits went to Patu Kio, which is contrary to the received opinion in other islands. A little way down we were brought to a stop by the difficulty of finding steps among the boulders and the lack of a rope. Rembo said that the interior was once "good fellow" but an earthquake had spoilt it. We could see the entrance of a hole which certainly went some way down as the stones were heard bounding down for some distance. On coming out we were given dark leaves to prevent sickness, and were instructed not to look back. We drew up according to custom in reverse order to that in which we approached, but Mia Pitu remained behind in order to perform a charm with wild areca (*anga piru*), which we could not see since we might not look back. Njiruviri, however, said that it is called *gonagona* or casting, and is only used when anyone visits the cave the first time (*mala mbolo*). A piece of areca nut wrapped up with lime in a leaf of betel pepper is thrown into the cave with the words: "The cast offering of this man; let him not be ill; let him not be sick; let his first visit be good." (XII.) A first visit is never

made except in the company of those who have been there before. Women may go. The cave is not much visited now; formerly they used to go and kill bats to the number of four or five hundred. Pangoro used to know the charms. This sport was discontinued, owing to a misadventure which Leoki relates, thus:—

The Legend of the Cave.

They prepared plenty of coco-nut leaves (for torches); the people here carried them and went up: "Let us go and catch bats by torch-light in the cave." A few waited outside; they entered inside the cave and made torches to light up the bats. The bats came out and they hit them to death, and they lit torches to come out; but one lost his way and did not see the entrance. The people came out and went down; but he remained lost in the hill. "We left in the cave one of our kinsmen, we did not see him, he is lost." The people cried. He went about under the ground, that man who was lost, and he came down to the parting wall.¹ "Where have you been, you?" said the spirits. "I have gone astray, I have gone astray in the cave and thus I have met you spirits." "Here is food," and they gave him grubs. But he felt squeamish and hid it away; they gave him corpse, but he felt squeamish and threw it away also. "Well, here are two king coco-nuts, carry them," said the spirits. He went down underneath Saseru and got into mud. The people of Mbulolo were holding the Fourth Day Feast for the man who had strayed in the hill. And he came down just underneath Kunda's hamlet and he swam and went down and came near Kundakolo's coco-nut grove and dived; he went down into the cave at Mbulolo, and he came to the surface and came ashore and went up and sunned himself. Now one man was carrying the entrails of a pig and went down; and he saw him sitting on the shore reef; "Heigh! for you have we been holding here the Fourth Day Feast." "'Tis even I." "Well, come and let us go up to the hall," and he followed. "Look outside the hall," said the people. "Ee! ee! ee!" they cried, "it is for you we have been holding the Fourth Day Feast; you are living." Then he joined them in eating the Fourth Day pig. Four days he remained and then he died.

There were no king coco-nuts till he brought them.

Lungan Customs.

Our information concerning Lungan is very scanty, as our informants were mostly young and all very ignorant.

The corpse is taken to the bush. The funeral party put on leaves of *pepu* and return in reverse order to that in which they went. There is a Fourth Day Feast at which a prayer is recited known to one man. The Bathing Feast is on the twelfth day; they wash in the sea, and make taro puddings, for they have no sweet yams. On the twentieth day they put in the skull. The fiftieth day is kept; they "make

¹ A wall that divides the men's part from the ghosts.

finish" on the hundredth. Our informants did not know the *Londu*. The widow remains confined for twenty days, after which she washes in fresh water. Twenty days is also the period of sleeping in the dead man's house.

Ganoŋgan Customs.

Two Ganoŋgan informants proved much better, especially Lembu.

The dead body remains ten days in the house. The people come to see him and cry (*lūkānā*); they sleep in the house. The lykewake is called *Kōkūkē*. At the end of five or ten days they wash (*tū*); but for a chief they wait till a hundred. The body is taken to the bush and placed on a scaffold (*aleke*) with knees drawn up and facing west; broken rings, shields, spears, clubs, are placed with the dead. A man who died of a fall is buried and big stones placed on the top that he may not look back; a woman who dies in childbirth is also buried; lepers are buried or thrown into the sea. There is no soul catching, but the soul goes off to Sonto after five days, pausing on the beach of Nakasa.

The widow is enclosed; a *kuipi* consists in a little roof without walls closed by mats, specially made, at both ends, so that no one sees her (*sa ke mbatia na tinoni*). A chief's widow may not stretch out her legs except she makes a payment of three large rings; a commoner's widow pays three arm-rings; this custom is now known in Eddystone, though Njiruviri thinks it may have been so of old. A commoner's widow comes out (*vōtū pa ná pēguru*) after fifty days, a chief's after a hundred, and washes in fresh water. The man who blows the conch opens the door and closes it again; the widow may then stretch out her legs; why, Lembu does not know, but "tamasa (the god) he show before long time."

If a man is "nothing" there are no mourners (*mbembesu*) but a chief's relatives (*taviti*) and children (*tuna*) observe mourning for a hundred days.

The counting string is kept in a small basket till the end of a thousand nights or two years (*kuri aoro*).

On the fourth day (*vamande*) they eat a pig, and a leaf called *kimbu* corresponding to *neka* but growing wild. They make for each man a pudding (*yeigoto*) of taro (*sika*) nuts (*neni* and *nari*); the wrappings are thrown away, "he no *tambu*."

On the tenth day (*vamanoga*) is a big feast of pig, taro, yam and puddings.

There is no feast called *Ogono*, but for a chief they all wash together and make a big feast.

The head is put into the skull-house on the twentieth day with certain variations from Eddystone practice which we have noted at Iraña's funeral. The putting in of the basket is done at the same time.

There is no *Londu*; there used to be a medium like Kundaite but he has no successor; there is also no basket burning.

Another important difference with Eddystone is that they have feasts every ten days. This is one of the best established parts of our work, for owing to the

liability of such inquiries into dates to misunderstandings we went through it a second time with counters, and finally Lembu made a counting string of a thousand knots with small intervals after every ten knots ; with this he explained the whole system. These feasts consist merely in a "small Pounding" (*kinja ite*) of puddings at which only the family (*taviti*) attend, as at the Bathing and other minor feasts in Eddystone. A burnt offering is made with the words : "Here is the pudding for you the ghosts." (XIV.) On the hundredth night they wind up for a commoner. For a chief they have large feasts or "big poundings" every hundredth night ; any old man who is related by blood, not by marriage, makes a burnt offering of pig in the common fire. On the nine hundred and sixtieth day the thousandth or *Vavolo* is drawing nigh (*tata na vuro*). On the nine hundred and ninetieth they bring in taro ; they make no puddings on that day ; on the nine hundred and ninety-third they get pigs ; two days later they pound puddings ; on the nine hundred and ninety-ninth guests arrive from Lunga, Kumbokota and other places. As many as twenty pigs are killed for a chief ; four or five for a commoner. At night they sing : the men in one house, the women in another ; they do not eat food but they chew betel nut. In the morning they distribute rings to the male singers, not to the women ; the chiefs are not specially honoured. A burnt-offering of pig is made at some time. When all is over they bury the last twenty knots of the counting string ; the rest of it is worn by women as necklaces.

The widow may never cut her hair till death or re-marriage. If she marries again, she cuts it and throws it away in the bush, but does not hide it.

IV.—SKULL-HOUSES.

A skull-house is called *tambuna* or "sacred thing."

The vast majority of skull-houses in Eddystone are thatched ; this type is called *tambuna pina*, from the ivory nut with which they are thatched. Cut a miniature house in two along the ridge, take a slice out of the half, wall it on both sides, place a grating between the centre posts as the front, and you have a thatched skull-house. Not only does a skull-house look like a half-house, but it is so in every detail of its construction. We had a small model made in our presence by one of the mortuary priests, whose function it is to build skull-houses. He first planted in the ground two centre posts (*turu*) and connected them at the top with a beam (*palapala*). Then he put in the side-posts (*papake*) and also tied a beam to them. On these two beams he laid five rafters (*gaso*) projecting somewhat beyond the ridge ; underneath these he tied five purlins, severally named as in a house. Below the upper extremity of the rafters he tied the ridge-pole (*tako isu*) ; along the lower extremity he held the *piko pina*. He then prepared the thatch according to the usual method, making the ridge in the style known as the "Eddystone style." Of course, as the other half of the house is missing, the ridge thatch cannot be spread

over it, but has to be folded back underneath. The gable thatch (*paṅgala*) is represented by two lines inserted between the leaves at both ends, and projecting beyond the lowest row. The wall beams (*palapala ororo*) are then added on the sides. The thatched walls are hung on these. (see Pl. VII, figs. 2 and 3).

Lastly the cage-work is added in the front, that is the space between the centre posts; it consists of two horizontals, the "beam" and the "log" (*koṅga*) and three uprights. On the lower ridge pole next the centre post on either side are hung offerings, such as the *poporae* (p. 91), in a loop made of the creeper called *njinono*.

The chief measurements of this reduced model were:—

Centre posts, 50 cm.

Side posts, 25 cm.

Distance between centre posts, $12\frac{1}{2}$ cm.

Beam or wall plate, $24\frac{1}{2}$ cm.

Rafters, 74 cm.

Projection of the rafters beyond the centre posts, 17 cm.

Ridge, 57 cm.

Note the projection both of the rafters and the purlins beyond the centre posts.

The wooden grating is hung with shell ornaments, rings, and those sections of spiral shells called *rango*. These ornaments are collectively known as *mbiṇanara*; they are especially profuse on the skull-houses of chiefs (*mbaṇara*), for instance in Tirolivotu and Ogogo.

Thatch is now being replaced by corrugated iron.

The wooden skull-house is called *leva*. We only saw two examples in Eddystone, both in Pa Na Gundu, and both used for Ganongans (Pl. VIII, fig. 1). They were made according to the Vella-Lavella plan: a long box, like a coffin, higher in front than behind, resting on a perpendicular plank, and with the front open. In Nārīlululumbi was a corrugated iron house similarly supported by a single post. This style also suggests a half house, but very much flattened; but Kundakolo drew a wooden skull-house (*leva*), representing a complete house with the gable end as the front, a type common in Roviana.

The stone skull-houses are of a different type altogether, suggestive rather of diminutive dolmens. The walls are made of unhewn slabs and other slabs are laid upon them. There are few examples. They do not seem to take more than three or four skulls.

Both the thatch and the stone skull-houses stand on stone foundations about three feet high. At the foot of this lies a small fireplace of heaped stones: this is the sacrificial fireplace (*iku vavamiro*). The space all round the skull-house is forbidden to all but the mortuary priest. A few paces removed from it is the common fire, as we shall call it, literally "the roasting fire" (*iku paparagu*), where the food is cooked for the people who attend the sacrifice. There usually stands beside the

skull-house a *vonjamboe* tree or two on which are hung the leaves that have been used to wrap puddings ; at one skull-house we saw, the tree was an *ilatoio*.

Skull-houses may face any point of the compass.

At the present day skull-houses are away in the bush, a few only are close to dwellings, none actually in hamlets. This is due to the recent moving of the people from the bush to the shore. Until recently they kept their skulls beside their homes in Ogogo, Saseru, Mbakia, Tirolivotu. The hamlet of Narililimbi in Ove has two skull-houses beside a house that is still standing.

Mortuary Priests.

Those who minister at skull-houses are called *iama*. It is they who build new skull-houses when the old are decayed, but the words used in consecrating seem to connect them specially with the skull-houses of chiefs.

The chief mortuary priests in our time were :—

In Narovo.—Mbui and Soge, both captives from Ysabel.

In Ove.—Rona of Vella-Lavella.

In Karivara.—Lepo, a captive from Ysabel.

In Simbo.—Kainyira of Simbo.

Lepo's predecessor was Tuete of Ysabel, who appeared to have retired. Njukili of Narovo used to officiate at Angi, but appears to have retired. Nareti of Narovo ministered in Mbakia, not at all skull-houses like Mbiu and Soge. Thus all the chief mortuary priests but one at the present time are foreigners. The reason why natives do not officiate is that "s'pose he make him, I think he die ; I think by and by devil he cross, he die." Men of Ysabel and Vella-Lavella were said to bring *tambu* from Ysabel, and a good one, so that they do not die ; this does not agree with the fact that these captives were probably taken as children, and that they were really ordained by natives. Nareti was not afraid but wished to become a mortuary priest, for the sake, it was said, of the fees, rings, sometimes shields. Njura ordained him, and he built a skull-house in Mbakia to replace one set up by Mbiu, which had decayed, but Njura's charms were not strong enough, so Nareti lost his sight.

Among past mortuary priests we have noted Enguru of Narovo : he knew "plenty *tambu*." No one was ordained at his death, but he left instructions that his captive Mbiu should be ordained when he grew up. In the meantime they used to call in from Simbo one Mbeka, an Ysabellian, to attend to the skull-houses. When Mbiu was old enough Rongana and Tomba, both chiefs, Tomba residing in Olepe ninga, appointed him ; Tomba consecrated him, for, though not a priest himself, he knew Enguru's charms. Since then Mbiu has built all the skull-houses in Narovo and Karivara ; he also officiates at Tirolivotu in Ove. Mbiu is Sogaviri's mortuary priest ; Ngea wanted one also, so he appointed Soge.

In Ganonga, men of Ysabel also officiate alongside of Ganongans, because, says Lembu, Ganongans are few.

Charms (Potana iama).

Mbiu consecrated or, in native parlance, "sent up" Soge according to the same methods as Tomba used on himself, that is, he rubbed him with scraped bark of the "black kanary" (*nari ndavala*) without any prayer¹; he also put on him a belt of some creeper. Then Mbiu and Soge jointly built a skull-house at N̄ariseru belonging to N̄gea and Njukili. Soge left his belt on the skull-house. After the feast Soge put on another belt.

When Mbiu was ordained he paid two rings to Tomba.

Njura rubbed Nareti down his sides from the shoulders to the toes with some stuff (*tambu*), then blew on his hands; he then repeated the process from the toes to the shoulders and again blew on his hands. The fee was one ring.

Sunga, who ordained Lepo, put on him a girdle of *love-mbagea*; took scrapings of *vasara* in both hands and passed them down the sides from the face to the chest four times. This process of *ngula*, as it is called, was accompanied by words not known to Lepo, but which Kundakolo knew and gave as follows: "This mortuary priest send up to the company (?) of chiefly dead; do not say 'why does he come up?' but let him build a skull-house.² Let him not have the itch; let him not waste away; let him not have rash; let him be whole in body, bonito in the sea, porpoise in the sea, *virongu* in the sea, *vape* in the fresh water, *lepa* in the fresh water, cray-fish in the fresh water, eel (?) in the fresh water, and let him lay hold (?) on you, build a skull-house O!" (XIV.) The same day Lepo built a new skull-house; for the three days that this lasted, those who attended must abstain from women. They ate bananas, pig, pudding, and coco-nut.

We have three consecration charms or *potana iama*, as they are called, from Simbo.

Erovo's comes from Mbugotu in the island of Ysabel, having been taught him by Pepele, a Mbugotu slave, who by capture became his "father." He rumples successively between his palms any number of dead leaves of *rosi*, three of *paripari*, four of *kanda*; he scrapes four sticks of *lembu*, four of the small kanary (*vino*). With the *rosi* he strokes (*ngula*) from the shoulders to the hips, with the *paripari* on the right arm, and with the *kanda* on the left; the legs from the groin downwards with *tumbi*, the back of the right leg from the buttock downwards with the *lembu*, and the back of the left with the small kanary. Girdles are made of *vuvu*, *mamaroko*, *pusi*; a right shoulder belt of *mbama*, and a left one of *ndeke vuvu*; a leaf of *kata*

¹ This is very doubtful.

² Pidgin: You no say: "What name this fellow man come hold him head belong me tellow?"

kata pa mborogo is inserted into the waist-band (*lakori*) over the hip; the legs, arm and body are whipped with the fruit of *kuruvete*. Finally *mbombarata* is hung on the posts of the skull-house.

The other two specimens are said to be indigenous.

Nimu invests the mortuary priest with a girdle of *raingoso molu* when he clears the precincts of the skull-house (*poka tambuna*), and gives him a girdle of *sinosage* and rubs (*igula*) him with the scrapings of one stick of *marapu* when he begins work; another rubbing with the scrapings of one stick of *valiolange* occurs when the mortuary priest handles the heads. Nekele was instructed by Nimu, his "father."

When Ndomo "sends up" a mortuary priest, he puts upon him a right-hand shoulder-belt of *mamaroko*, and a left-hand one of aroso *mbusambusa* (we reckon right and left according to the shoulder over which a belt is passed; they reckon it according to the flank on which it rests, so that what we call right they call left, and *vice versa*). When the priest has finished his work he receives a belt of the skin of *muma mborogo* made into a string; this is more likely to be the time when he is stroked with four pairs of *nyou*. One of these processes is accompanied by the words: "I stroke this priest; come down, the itch, the rash." (XV.) Ndomo holds this method from Siana.

We understood that these charms were used for the consecration of a new mortuary priest; but as some charms are performed every time he restores a skull-house, it is probable that these same charms are used every time the mortuary priest restores a skull-house, and that they are all therefore part of the festival known as *evevāna*.

The Restoration of Skull-houses (evevāna).

We witnessed the tail-end of the renewal of the skull-house in Aŋgi. It is the skull-house of Magoana, the god (*tamasa*), and is the first in all Eddystone.

The work had been going on for several days when we arrived. There was much rain at the time. Njiruviri accounted for it by the desire of the dead (*tomate*) to wash while they were exposed to the weather. The hill was crowned by a level space; a little way down the slope was the skull-house. On the level space stood a house called *vona tambuna* or "holy house"; all the people attending the restoration slept in there. In such a house they hang up, as in an ordinary house, the scare-ghost (*teve*) and the sacred areca bunch (*ure*), only the bunch is rotten (*ure mate*), not fresh; no ceremony is used in putting it up. Women are not allowed within this house, nor may the men who attend go home, or it would be thought they wanted to sleep with their wives. Young men are not allowed between the ledge of the hill and the skull-house, but old men are. On the hill grows a sacred ivory-nut palm (*pina tambuna*) of which the leaves are reserved exclusively for skull-houses; but there is no restriction upon climbing it.

We arrived as Soge, the priest, wearing a creeper as girdle, was making the caging, while the rest were cutting down shrubs all round. The heads had been taken out and shaded with leaves of *mbupa*.

Among those present were Rembo and Sogaviri, the chiefs, Rembo's sons, and a boy about twelve. Several of the owners were absent, having declined to take part, and Rembo was obliged to ask Sogaviri to come instead.

Rembo wore crossed shoulder belts of *mamaroko* to enable him to open the basket of nuts (*pinupunusu*). He performed a charm upon it called *vonuvonu*, which consisted in putting blossoms or fruits (*vua*) of *vonjamboe* inside with the words: "Let not the women eat, let none but men eat." (XVI.) It is not clear from our notes when this charm was made; presumably when the basket was filled; and the belts were to enable him to open the charmed basket with impunity. Anyhow, the general theory of the belts was given by Njiruviri as follows: "a man wishing to make a charm puts it on himself; he first puts on himself the same charm as he afterwards puts on his patient; thus, if I want to treat a man for stomach ache with *vonjamboe*, I first put *vonjamboe* on myself; this in order not to catch the patient's disease."

Rembo distributed rings, two rings to Soge, the priest, and one arm-ring to each of four men, including his youngest son and Sogaviri. These arm-rings were pay for getting the materials. Vigu's part had been to get the thatch from the sacred palm. All the other people present gave rings to Rembo for "being the first to speak" (i.e. giving the order to restore) and for superintending the work. They also presented rings to the priest, who returned one as bad. The collection was poor owing to the absence of some.

The "first pudding" (*yamu vakenu*) was then pounded for the mortuary priest. When he had eaten, puddings of bread-fruit and bananas with nuts were distributed all round. Three areca bunches were divided up. Some pig had also been cooked.

Our notes describe the burnt offering after the distribution. This is quite contrary to the usual practice, and we should probably have noticed it and inquired into it had it been so; possibly we did note the burnt offering out of its proper place, which is before the "first pudding." Soge, the priest, pounded together nuts and one of the three plantains of the kind called *vundi tinoni*; this he made into miniature puddings called *poporai* (cf. p. 91) which he hung on either side of the roof of the skull-house. The other plantains he used for puddings which he burned in the fire before the skull-house with such words as: "Here is the pudding for you, the dead; be propitious and may we abide (?)" (XVII.) The leaves in which the pudding was wrapped were tied on the neighbouring *vonjamboe* tree.

At this point we retired, being told that the performance was at an end. It was not till my third visit to the island that my interpreter, Keana, gave away the existence of a prayer called *varavara pa n'ulu tambuna*. The term *ulu* was explained as the removal of the charms in order that the people might go to "house belong woman." The name therefore means "the prayer on the removal of the charm,"

or "the prayer at the removal of the charm at the skull-house." Our first version was obtained with the aid of Keana from Ndomo of Simbo who learned it from Siana. A second version was dictated by Njiruviri with his usual conscientiousness and accuracy; but the steamer got under weigh as we were going through the text, so that he had to go ashore with his commentary unfinished. His version is vastly better than Ndomo's. Ndomo was not very willing, and Keana, on whom the informant's indistinct utterance made us dependent, only thought of abridging his task; it will be noticed that the alternating affirmation and denial characteristic of the prayer has been cut out except here and there. (XVIII.)

Keana says that all the people present at the restoration sit down together. Ndomo opens a young coco-nut (*karukaru*) with a pig's tusk and pours the milk into a leaf of horse taro; he breaks the tusk and places it beside the broken coco-nut: thence sprinkles the milk over all present; this is called *ulu*. Njiruviri opens one young nut (*karukaru*) of the "green coco-nut palm" (*inda mbu*) with a pig's tusk; taking two leaves of *pepeu* and two of *ngelua njimiri* in either hand he dips them into the milk, then holding them begins the prayer. He learned it from Rembo who with him officiates in Narovo and Ove, not in the other two districts. As the prayer is little else than a string of names I shall only translate as much as is necessary. (XIX.)

"I purify, I . . . ; I purify for the four seas at Vura; I purify at the frigate bird at Na Vura; I do not purify at the frigate bird at Na Vura, I purify at the *kovara*¹ at Na Vura; I do not purify at the *kovara* at Na Vura; I purify at the *elekai*¹ at Na Vura; I do not purify at the *elekai* at Na Vura; I purify at the Barringtonia fruit; I do not purify at the Barringtonia fruit; I purify at the *kikopo*² fruit; I do not purify at the *kikopo*; I purify at Goi; I do not purify at Goi; I purify at Mbolo; . . . I do not purify at Piropiro; I purify at the great stream at Mondo; it flows down, it flows up, it washes away the poisonous water of the chiefly dead; the thatch is poisonous, the rafters are poisonous, the creepers are poisonous, the ground is poisonous; let me purify away the two mortuary priests; let them come down and pass under; let them come down and step over; let them not dwindle; let them not have rash; let them not itch; let them not have lice (?); let them be bonito in the sea; let them be crayfish in fresh water; let them be *vape* in fresh water; let them be eel in fresh water; let them be bonito in fresh water (!) But I do not purify at the great stream at Mondo, I purify at Mangava . . . ; it flows down, it flows up; it washes away the poison of the chiefly dead, . . . let them be bonito in the sea, porpoise in the sea; eel in fresh water, crayfish in fresh water, *vape* in fresh water." The meaning of this passage beginning "it flows down" is "let the water take away all the bad '*tambu*' used to make the skull-house; if the mortuary priest (there is only one, but he is called two) keeps these '*tambu*' and has intercourse

¹ Sea-birds.² A tree.

with a woman, he gives her sores and makes her sick ; when the ‘*tambu*’ is removed, she may step over him. His (or their ?) body is to be clean like that of the fish in the sea and in the fresh water.” The prayer resumes : “ But I do not purify at the great stream at Oki ; I purify at Nāripapene,” and so forth, ending as before. Then it resumes a fourth time : “ But I do not purify at Ngingenge, I purify at Keara ” ; it goes on with names of places, then : “ I do not purify at Gui ; I purify at the setting out ; I do not purify at the setting out, I purify at the crossing ; I do not purify at the crossing, I purify at the small Piku ; I do not purify at the small Piku, I purify at the Great Piku.” Then follow birds and trees ; then “ I purify at the landing ; I do not purify at the landing, I purify with all the chiefs, ending as before. Then he shouts : “ I purify ; I purify ; I purify ; I purify ; at the great passing under, at the scratching of the bush turkey.” These words run in the original : “ *Ulu ŋgua rī* (four times), *pana kauru lavalava, pa na kasikasi la-pe.*” The pitch of the voice rises on the first and third *ulu ŋgua rī*, and drops on the second and fourth ; the *rī* is drawn out ; there is a pause before the last syllables of *lavalava* and *lape*, then the voice, which has been rising in pitch, drops suddenly. With these words he dips the *pepeu* leaves in the milk and sprinkles all present. Then he takes up the prayer : “ I do not purify at the great stream at Varigila,” ending again with “ the scratching of the bush turkey,” and again sprinkling the people four times. The prayer goes on to end up in the same manner and with four sprinklings. The last time he winds up the list of places with “ I purify in the garden of Ogogo ; the . . . abides ; the prayer abides and let me purify and bring down the two mortuary priests,” then winding up as before with “ the scratching of the bush turkey.” The people are sprinkled four times and that is the end.

Vura, the first place mentioned in the prayer, is the straits between Ganonga and Vella-Lavella ; various birds and trees connected with these straits are mentioned. Then follow the names of places in Kumbokota as far as Goi ; at Vori begins a list of names in Ganonga district ; we do not know where the places between Goi and Vori belong to ; Lelete is east of Vori. In Patu Poli “ the prayer (*varavara*) goes up to the bush ; Nao and Paŋgoli are also inland ; the following are on the coast. Ganonga ends at Pie Tovo ; at Mbungana “ the prayer enters Lunga.” At Gui it sets out to cross the sea. The Piku is a wave that carries the prayer to Eddystone. The *Barringtonia* fruit floats to the shore ; then the prayer comes close to Tapurai. (The *kikopo* also is often seen floating about.) From here on the commentary fails us, but we can trace the prayer along the west coast of Eddystone till it ascends to Ogogo, the residence of the chiefs. Ndomo’s version on the other hand goes to Ou, the residence of the Simbo chiefs, and ends in Voloso field.

Tirolivotu.

Tirolivotu is the site of the skull-houses of the Ove chiefs. There are three in a row ; the first belongs to Toka, the second to Kave. the third, standing forward

a little, to Laiti. Opposite the first stands the "sacred house" (*vona tambuna*) where the men sleep during the restoration; beside it lies a stone underneath which is hidden a shell-ring with orange-stain; the neighbourhood of this stone is avoided. The skull-houses are connected with leprosy. (Pl. VII, fig. 4.)

The ceremony of *evevaia* last six days at Tirolivotu, which is probably the period for all skull-houses. Three days they set up the sacred house where they sleep; the fourth is called *vakatapa*, or "bringing near": on that day they take up food to the skull-house; the fifth is *kumbo gaso* or "plenty of (? gathering) rafters" because they collect materials; the sixth is *evevaia* proper or *nyuere*. On this day they bring up sacred rings (*poata*) from Nariulumbi; these are connected with leprosy. Toka carries them; he protects himself against leprosy with a belt of *mamaroko* which he puts on saying, "I put on the creeper; do not give me sores." (XIX.) He then takes the rings with his hands and puts them into a new basket made by Amu, a woman. He hangs them up in Tirolivotu on a horizontal stick resting at one end on the branch of a *njanjala* tree. This ceremony is called *varamana* and is not accompanied by any words. The rings remain there two days. Ndeo, Kave's brother, takes charge of the sacred rings from Mamanini and hangs them up on a *malanjiri* plant, close to Toka's tree.

There is also a heap of conches in Tirolivotu. They are blown when the skull-house is complete. This custom, known as *sasara tambuna*, is only observed at Tirolivotu outside Narovo. and in Narovo it is peculiar to Kindavai and Nariseru. It is reserved for the "chiefly dead" (*mate mbanara*). It is equivalent to wailing (*lukana*). The reason is that the god (*tamasa*) Ngangae appointed that it should be so.

Various Skull-Houses.

The Narovo prayer at the restoration of a skull-house ends in Ogogo, the old seat of the chiefs. The skull-house there appears to be specially sacred, and we were cautioned not to approach too near. It is made of wood and corrugated iron; it is very rich in rings, arm-rings, rings of the kind called *mbulau*, and ornaments called *ranogo* (Pl. VIII, fig. 2). To the left of it grow sacred turmeric (?) plants (*ano*) which Rembo's father used but not Rembo. Among the inmates are Rongana and Ruru, former chiefs.

The skull-house in Mbakia is confined to men. It is not the only one. No reason could be given.

The finest collection of skull-houses was in Pa Na Gundu, six in a row (see Pl. VIII, fig. 1). Two are of the type called *leva* (p. 104); one is for men only.

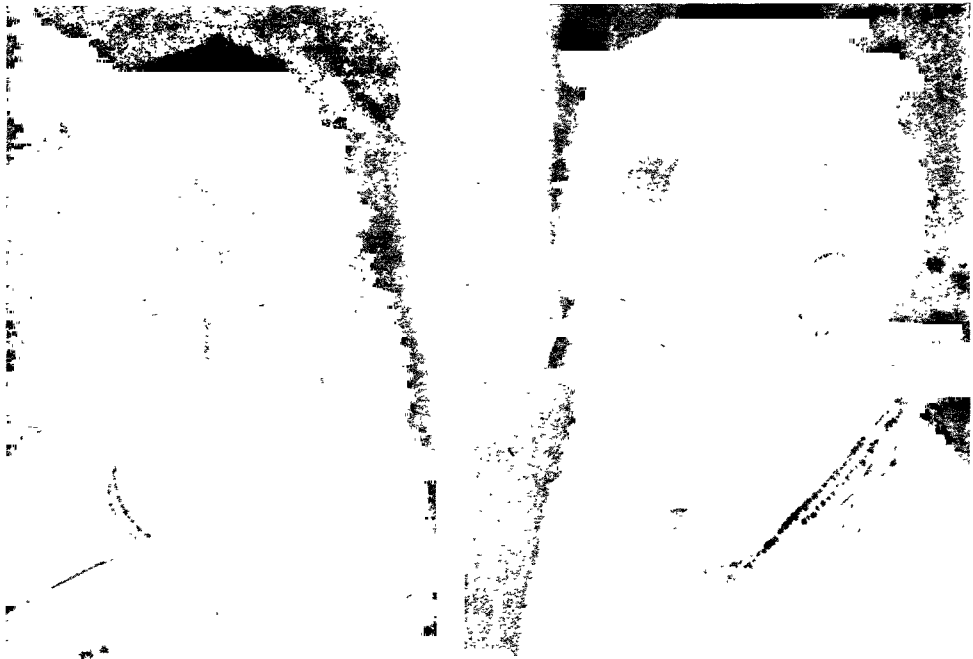
Abandoning a Skull-House.

The offering of first fruits at skull-houses takes up a great deal of people's time in the nutting season. Skull-houses are therefore sometimes formally given

up ; a ceremony is then performed which is called *varavu tambuna*. Thus at Tirolivotu besides the skull-houses we have described were two decayed ones which were given up in the days of Kaipeso ; he killed a pig and put the whole of it into the common fire (*iku paparagu*) saying : “ Here is the pig for you the chiefly dead ; I abandon (?) you and I shall not sacrifice to you ; I shall not light the fire, and I shall let you go so that you decay.” (XX.) No one eats of the pig. Kaipeso also presented ten ordinary arm-rings, ten arm-rings of Choiseul manufacture, and whale’s teeth, saying : “ Go, you chiefly dead, here are rings, here arm-rings, here pig, here a whale’s tooth.”



FIGS. 1 AND 2.—NJIRUVIRI. FRONT AND SIDE FACE.



FIGS. 3 AND 4.—KUNDAKOLO. FRONT AND SIDE FACE.

THE CULT OF THE DEAD IN EDDYSTONE OF THE SOLOMONS.



FIGS. 1 AND 2.—LEOKI. FRONT AND SIDE FACE.



FIG. 3.—KAVE.



FIG. 4.—PURANA.

THE CULT OF THE DEAD IN EDDYSTONE OF THE SOLOMONS.



FIG. 1.—STONE HEAD OF NAI AT UELAL.

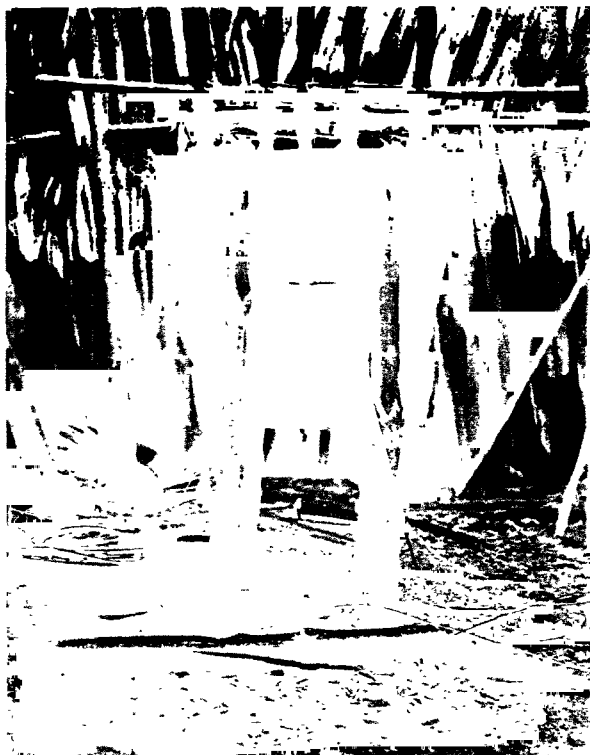


FIG. 2.—MODEL SKULL-HOUSE, UNFINISHED.

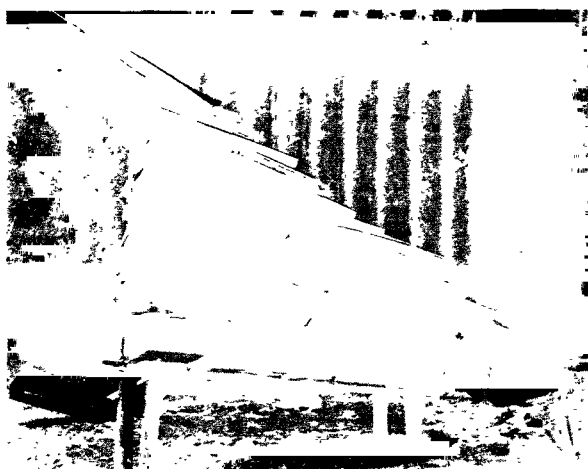


FIG. 3.—MODEL SKULL-HOUSE.

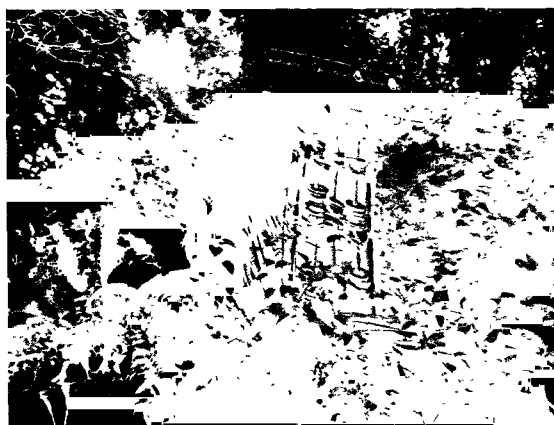


FIG. 4.—SKULL-HOUSE AT TIROLIVOTU.



FIG. 1.—SKULL-HOUSES AT PA NA GUNDA.

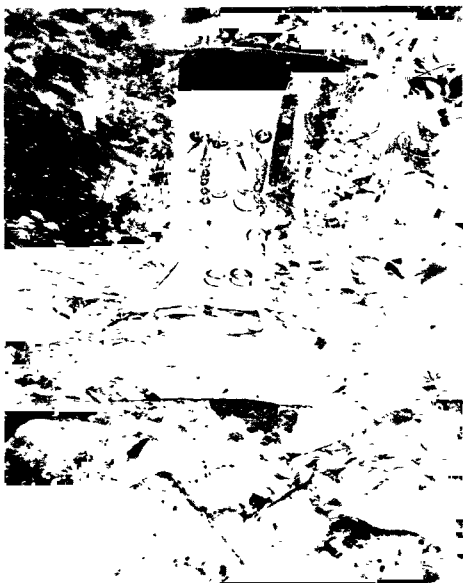


FIG. 2.—SKULL-HOUSE AT OGOGO.



FIG. 3.—MADNESS SHINE AT PATUSOGARA.





FIG. 1.—PRIEST POUNDING A PUDDING AT TANGELE.

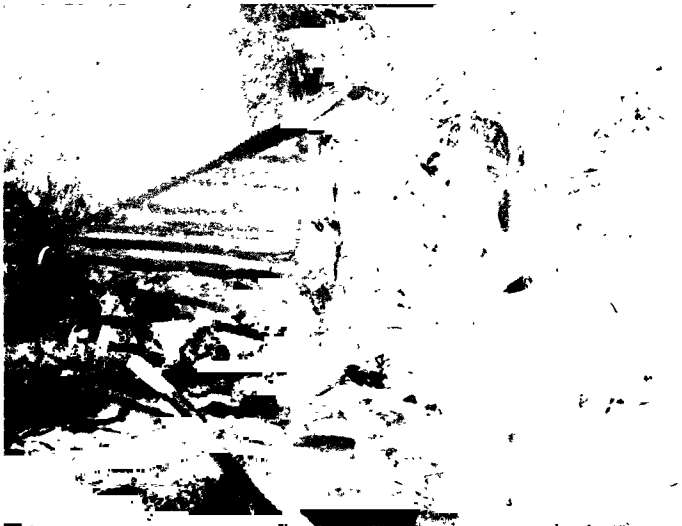


FIG. 2.—BURNT OFFERING TO NGEA AT TANGELE.

THE ANTHROPOLOGY OF THE CHILTERN HILLS.

By Mr. W. BRADBROOKE and Prof. F. G. PARSONS, Vice-President, Royal Anthropological Institute.

THE country close to the Chiltern Hills is referred to so often in anthropological literature as the home of a particularly dark people, that one dares not doubt that the statement is, or at all events was, true.

Assuming that the condition still exists, and has survived the levelling influence of modern free locomotion, it becomes a point of interest to try to determine whether there are scattered islets of darkness, or whether it is pretty generally sprinkled throughout the general population of the area.

Many clergymen and archæologists assured us of the existence of islets of dark folk in isolated hamlets in the hills, though we were not fortunate enough to find them, and it seemed to us, therefore, best to note carefully the hair and eye colour, cranial measurements, and height of as many males as possible whose parents and grandparents had lived in the neighbourhood of the Chilterns.

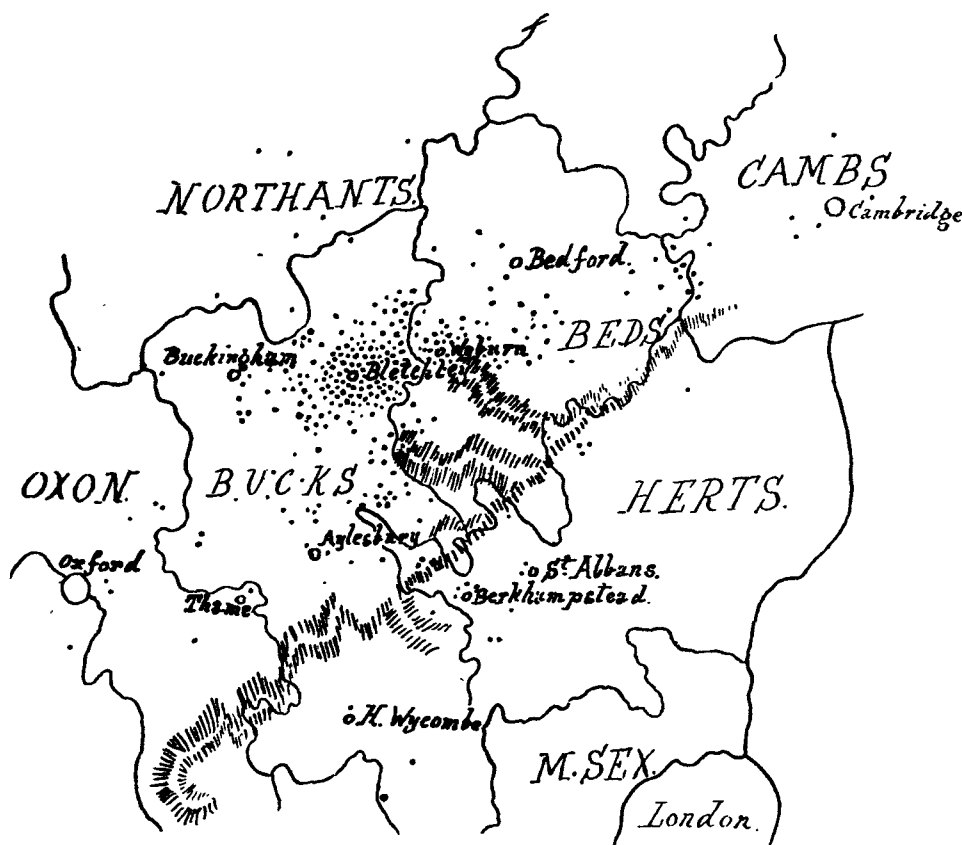
Our opportunities for this line of investigation are rather good, since one of us is a medical officer of the L. & N.W. Railway Co., at Bletchley, and in the habit of examining a considerable number of candidates for the company's service. Almost all of these are local, and very many have been born in the neighbourhood, but the elimination of those whose parents or grandparents came from a distance reduced the number so materially that it has taken us two years to get 300 really local products.

It will be seen that their ancestry ranges all over the North Chiltern area, practically from Oxford to Cambridge, and it is worth emphasizing the point that their physical characteristics were able to be noted carefully and leisurely in the consulting room, which is much more satisfactory than the cursory glance in the street or market-place, with which the observer often has to be contented.

The head measurements were taken partly to increase our very slight knowledge of the English head form and its distribution, and, partly, in order that, if we found a larger number of dark people than usual, we might see whether they tended to

long- or short-headedness. The height too, we hoped, might help to a certain extent, as we should expect it to be less, on the average, in the dark people, supposing that they were of Mediterranean ancestry.

We determined to limit our researches to males, because an analysis of Beddoe's work which one of us had lately contributed to the Institute's *Journal* (Colour Index of the British Isles, *Journ. Roy. Anthropol. Inst.*, vol. 1, 1920, p. 159), shows that



females are, on the whole, appreciably darker than males, and comparisons are therefore less reliable when the sexes are mixed.

We were led to make Bletchley our point of investigation because we believed that the dark people, if they still existed, would be found to the north of the Chilterns, in Buckinghamshire and Bedfordshire, and that they were the remains of the Long Barrow or Mediterranean people, who had been isolated by the dense forest stretching from London and the Thames to the Chilterns on the south, and by the fen country of the Ouse on the north and east.

We did not think that the Chilterns themselves would form any serious line of demarkation or protection to folk seeking isolation, because the low chalk ranges have always been favourite dwelling-places and highways for all the earlier races who have inhabited these islands. Nowhere else could a track be so easily made or followed at all times of the year, since the traveller was above the line of floods and fens and, in those parts where the hills are wooded, beech is the principal tree, and a beech wood is singularly free from undergrowth.

For these reasons, no doubt, the North Downs were chosen for the line of the ancient Neolithic track known as the Pilgrims' Way, and there is every probability that the Icknield Way, which ran along the line of the Chilterns from Venta Icenorum, had the same origin.

We were not inclined to take as our centre, the south-western part of the Chilterns near High Wycombe, because that was the site specially chosen by the tribe of Saxons known as the Chilternsaettas, who, no doubt, had reached it via the Thames ; and was, therefore, one in which we thought it less likely that the remnants of an earlier race would have survived.

Working merely by a process of induction, since our local information was so varied and contradictory, we thought that a town like Bletchley, situated to the north of the centre of the hills and attracting local people from all sides by reason of its importance as a railway centre, would give us ample material from which we might pick out those inhabitants who could tell us whence their grandparents came ; and from these we might weed out all whose ancestors did not come from the Chiltern area.

In doing this, we cannot hope that we have done more than make a serious attempt to eliminate all but Chiltern blood, since it is only an uncertain proportion of the rural population which really knows where all its grandparents were born ; but the result must be a good deal more valuable, though less abundant, than that obtained by merely taking the colouration and head measurements of everyone available in a certain town or village, as Beddoe did.

On the whole, we are inclined to think that, though the inhabitants of towns like Luton and Hitchin have been largely added to in late years by immigrants from all over the kingdom, the rural inhabitants of the Chilterns are very stationary and usually intermarry with others from only a few miles away. This is borne out by the study of parish registers and Manor rolls, where names owned by people whom we have measured, recur again and again for many generations (even as far back as the fourteenth century), and their marriages show how close to home they usually sought their wives.

On looking at the map it will be seen that the ancestry of about half our subjects came from a few miles round Bletchley and Fenny Stratford, which is practically one district, and that the rest are scattered all over the North Chiltern area from Oxford to Cambridge.

The accompanying lists give the cephalic index, stature, hair and eye colour and ancestry of each individual.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
1	36	197	147	746	5 8½	r.	l.	Newton Longville, N. Bucks.
2	17	186	147	790	5 8	br.	l.	Beds.
3	16	194	151	778	—	d.	d.	Stoke Hammond, N.W. Bucks.
4	30	198	148	747	5 8	d.	l.	Cheddington, E. Bucks.
5	22	196	156	796	5 7	d.	d.	Beds and Cambridge.
6	22	191	152	795	5 7	bl.	l.	Maidenhead, N. Berks.
7	22	189	150	793	5 7	d.	d.	Beds.
8	17	193	155	803	5 3	r.	l.	Ivinghoe, E. Bucks.
9	28	206	156	757	5 11	d.	d.	Near Bedford, N. Beds.
10	41	200	158	790	5 8	d.	d.	p. Great Brickhill. g.p. Beds and Bucks.
11	59	187	157	839	5 8	d.	d.	W. Bucks.
12	32	209	158	756	5 9	f.	l.	Wing and neighbourhood.
13	21	193	145	751	5 6	br.	l.	Beds.
14	37	195	152	779	5 4½	br.	l.	N. Herts.
15	17	191	149	780	5 7	f.	l.	Fenny Stratford.
16	25	189	150	793	5 8	d.	d.	Stony Stratford.
17	28	194	154	794	5 5½	br.	l.	Gamlingay, Beds.
18	27	193	149	772	5 8	br.	l.	Bletchley.
19	64	194	157	810	5 11	br.	d.	Gt. Brickhill.
20	17	196	152	775	5 8	d.	n.	Akeley, Bucks.
21	28	201	159	791	5 11½	br.	d.	Bletchley.
22	60	202	152	752	5 9½	d.	d.	Bletchley.
23	45	194	150	773	5 6	f.	n.	Husborne Crawley, Beds.
24	46	198	162	818	5 8	br.	l.	Gamlingay, Beds.
25	16	192	156	812	5 4?	br.	l.	Gamlingay, Beds.
26	30	206	163	791	5 7	d.	n.	Beds.
27	23	189	147	777	5 6	br.	n.	Beds.
28	54	199	152	763	5 6	d.	l.	Bletchley (father of No. 132).
29	28	188	151	803	5 5	f.	l.	Sandy, Beds.
30	16	193	150	777	5 6	br.	n.	Fenny Stratford.
31	40	196	150	765	5 6	d.	d.	Bletchley.
32	25	204	152	745	5 5½	br.	l.	Mursley, Bucks.
33	24	185	151	816	5 7	f.	l.	Ridgmont, Beds.
34	35	206	153	742	5 10	br.	l.	Aston Abbots, Bucks.
35	21	195	147	753	5 6	d.	l.	East Hatley, Cambs.
36	26	204	156	764	5 10	br.	l.	Comberton, Cambs.
37	41	198	153	773	5 8	d.	l.	Bletchley.
38	22	193	149	772	5 9	br.	l.	N. Bucks.
39	34	195	146	748	5 7	br.	l.	Newton Longville.
40	32	193	146	756	5 5	f.	l.	Ely, Cambs.
41	20	200	146	730	5 9	f.	l.	Lidlington, Beds.
42	19	198	158	798	5 11	f.	l.	Bletchley.
43	51	202	150	742	5 8	br.	n.	Bow Brickhill.
44	51	195	150	769	5 2	bl.	l.	N. Bucks.
45	32	196	150	765	5 9	d.	n.	Hanslope, N. Bucks.
46	16	191	150	785	5 6½	d.	l.	Gt. Horwood, Bucks.
47	50	184	153	831	5 6	d.	d.	Bletchley.
48	19	202	156	772	5 6	d.	d.	Bletchley (son of last).
49	33	204	156	764	5 6½	bl.	d.	Bletchley (brother of No. 126 and No. 127).
50	21	180	152	844	5 10	d.	l.	Milton Keynes, E. Bucks.
51	38	202	158	782	5 9	f.	l.	Beds and Cambridge.
52	20	197	153	776	5 6	d.	d.	Bletchley.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
53	17	185	149	805	5 9	d.	l.	Ivinghoe and Dagenham, Bucks.
54	26	205	151	736	5 6½	br.	l.	Gt. Horwood and Bletchley, Bucks.
55	24	183	154	841	5 9	br.	l.	Woburn district, Beds.
56	45	184	152	826	5 10	br.	n.	Brill, W. Bucks.
57	17½	198	151	763	—	br.	l.	Bletchley (son of last).
58	27	197	157	797	5 9	r.	l.	Hanslope.
59	38	197	155	786	5 5½	f.	n.	Kempston, Bedford.
60	27	190	140	737	5 3	d.	l.	Salford, Beds.
61	48	188	144	766	5 8	br.	l.	Newport Pagnell and district.
62	25	188	146	776	5 3½	br.	l.	Little Brickhill.
63	25	202	150	742	5 4	br.	d.	Near Cambridge.
64	35	188	149	792	5 7½	r.	l.	Padbury, N. Bucks.
65	58	196	151	770	5 7½	br.	l.	Bletchley.
66	36	200	148	740	5 7½	br.	l.	Harlington, Beds.
67	18	199	150	753	5 3	br.	l.	King's Langley, Herts.
68	17	184	140	760	5 6	br.	l.	Leighton Buzzard and district
69	37	203	154	758	5 8½	bl.	n.	Fenny Stratford, Bucks.
70	34	204	159	779	5 10½	d.	l.	Newton Longville.
71	37	204	161	789	5 8	d.	d.	Campton, Beds.
72	17	191	152	795	5 9	br.	l.	Cublington, Bucks.
73	56	183	150	820	5 4	br.	l.	Bicester, Oxon.
74	19	188	150	800	5 3	br.	d.	Fenny Stratford.
75	34	202	155	767	5 6	bl.	d.	Fenny Stratford and Berkhamsted.
76	31	194	151	778	5 5	br.	l.	Tring.
77	34	202	155	767	5 6	bl.	d.	Fenny Stratford and Berkhamsted.
78	32	198	157	793	5 7½	br.	d.	Bletchley.
79	33	204	159	779	5 8	d.	d.	Totternhoe, S.W. Beds.
80	29	178	154	865	5 9	br.	l.	Bletchley.
81	30	199	148	743	5 10	br.	n.	Near Cambridge.
82	50	193	150	777	5 9	d.	l.	Bow Brickhill and Fenny Stratford.
83	38	201	149	741	5 8½	f.	l.	Swanbourne, Bucks.
84	29	194	151	778	6 0	f.	l.	Bletchley.
85	48	202	147	727	5 9½	br.	l.	Oakley, N. Beds.
86	51	194	158	814	5 5	d.	n.	Newton Longville.
87	24	189	156	825	5 6½	d.	l.	Fenny Stratford.
88	24	194	151	778	5 4	d.	n.	Stony Stratford.
89	35	190	151	794	5 10	d.	d.	Bletchley and Newton Longville.
90	19	189	147	777	5 7	bl.	d.	Finmere, W. Bucks.
91	23	196	156	795	5 9½	br.	l.	Bletchley.
92	25	200	154	770	5 9½	br.	l.	Simpson, E. Bucks.
93	35	196	152	775	5 7	f.	l.	Soulbury, E. Bucks.
94	58	213	162	760	5 6	f.	l.	Leighton Buzzard.
95	36	194	152	783	5 7½	bl.	l.	Chackmore, near Buckingham.
96	57	192	151	786	5 7½	br.	l.	Northants and Bucks.
97	37	205	160	780	5 9½	bl.	d.	Gt. Brickhill (son of No. 19).
98	31	190	156	821	5 7	br.	l.	Milton Keynes, E. Bucks (brother of No. 50).
99	42	198	147	742	5 10	br.	l.	Bow Brickhill.
100	50	182	145	796	5 10½	d.	l.	Woburn district, Beds.
101	26	200	155	775	5 6½	bl.	d.	Berks.
102	27	199	148	744	5 9	br.	d.	Simpson, Bucks.
103	23	199	152	763	5 10½	br.	l.	Gt. Brickhill, Bucks.
104	25	189	156	825	5 10	bl.	l.	Bicester.
105	49	185	144	777	5 3½	bl.	d.	Woburn.
106	37	202	160	792	5 7½	br.	l.	Eaton Bray, S.W. Beds.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
107	24	193	149	772	5 8	f.	l.	Mid Bucks.
108	32	193	152	787	5 7½	br.	n.	Cheddington, E. Bucks.
109	46	200	150	750	5 6	r.br.	l.	Beds.
110	24	205	147	777	5 5	br.	l.	Wing, Bucks.
111	55	201	152	756	5 8½	bl.	d.	N. Bucks.
112	23	195	155	784	5 8	br.	l.	Bletchley.
113	56	199	153	768	5 9	d.	d.	Milton Keynes, E. Bucks.
114	16	186	144	774	5 3½	f.	l.	Fenny Stratford.
115	22	201	150	746	5 8½	br.	l.	Newton Longville and Little Horwood.
116	18	191	162	848	5 11½	d.	d.	Bletchley district.
117	26	187	149	796	5 5	br.	l.	Mid Bucks. (brother to No. 107).
118	55	189	146	772	5 3	br.	l.	Maddon and Horwood.
119	38	200	156	780	5 8	d.	n.	Marston, Bucks.
120	20	204	144	705	5 10½	d.	d.	Mursley, N. Bucks.
121	30	191	152	795	5 6½	br.	l.	Bletchley and Shenley.
122	26	202	153	757	5 7	br.	l.	Quainton, Mid Bucks.
123	27	197	149	756	5 10½	f.	l.	Brickhill and Woburn.
124	33	196	150	765	5 7½	d.	n.	Brill, W. Bucks.
125	33	198	147	742	5 9½	bl.	d.	Newton Longville.
126	26	198	152	770	5 8	r. br.	l.	Bletchley (brother of No. 49 and No. 127).
127	21	198	159	803	5 6½	bl.	d.	Bletchley (brother of No. 49 and No. 126).
128	80	198	145	732	5 6	(was) br.	l.	Bletchley (father of No. 65).
129	50	195	144	738	5 9	bl.	n.	Oxford district.
130	36	206	167	810	5 8	br.	n.	Tilsworth, S.W. Beds.
131	53	195	159	815	5 4½	br.	l.	Bletchley.
132	26	203	154	758	5 8½	d.	l.	Bletchley (son of No. 28).
133	46	199	146	733	5 6½	br.	l.	Fenny Stratford.
134	37	190	158	831	5 9½	d.	l.	Stoke Hammond and Soulbury Bucks.
135	18	192	148	770	5 4	br.	l.	Simpson, Bucks.
136	26	194	149	768	5 10	br.	n.	Newport Pagnell district.
137	48	199	160	804	5 7½	d.	l.	Bletchley and Newport Pagnell.
138	49	201	163	811	5 7	br.	l.	Totternhoe, Beds.
139	29	188	153	813	5 7	d.	d.	Bletchley district.
140	21	192	154	802	5 6½	bl.	d.	Sandy, Beds.
141	25	191	150	785	5 8	br.	l.	Stewkley, Bucks.
142	44	196	155	790	5 8½	br.	l.	Twyford, N. Bucks.
143	27	200	148	740	5 8	d.	d.	Little Linford, Bucks.
144	25	193	152	787	5 7	d.	d.	Ridgmont, Beds.
145	25	196	150	765	5 6	br.	d.	Beds. border of Cambs.
146	28	200	151	755	5 11½	d.	d.	Amphill and Bedford.
147	19	189	150	793	5 4½	br.	n.	Beds.
148	17	198	152	767	5 6	d.	d.	Twyford, N. Bucks.
149	46	197	150	761	5 7	f.	n.	Newport Pagnell district.
150	26	198	153	772	5 8	br.	l.	North Bucks.
151	29	196	148	755	5 5	br.	l.	Cheddington.
152	34	198	154	777	5 7½	br.	l.	Padbury, N. Bucks.
153	34	194	154	794	5 5	br.	n.	Dunstable.
154	73	196	150	765	5 3	d.	d.	Ridgmont district, Beds.
155	38	198	150	757	5 9	d.	l.	Berkhamsted.
156	21	203	151	744	5 7	br.	l.	Marston Morteign, Beds.
157	17	194	150	773	5 8	f.	l.	Little and Bow Brickhill.
158	35	194	150	773	5 9	d.	d.	Bletchley.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
159	34	201	149	741	5 7 $\frac{1}{2}$	br.	n.	Aspley Guise and Beds.
160	36	183	153	836	5 6	r. br.	l.	Potton, E. Beds.
161	24	182	150	824	5 6	f.	l.	Newport Pagnell district.
162	21	196	155	790	5 10 $\frac{1}{2}$	f.	l.	Bletchley.
163	46	196	147	750	5 3	d.	l.	Wing, Linslade, and Soulbury.
164	17	186	145	780	5 5	br.	l.	Newport Pagnell district.
165	25	191	153	800	5 5 $\frac{1}{2}$	br.	l.	Linslade, N. Bucks.
166	28	197	150	761	5 9	br.	l.	Beds.
167	44	200	149	745	5 10	br.	l.	N. Bucks.
168	40	198	153	772	5 9 $\frac{1}{2}$	bl.	n.	N. Bucks.
169	68	193	163	840	5 8	d.	d.	Bletchley.
170	33	197	148	751	5 10 $\frac{1}{2}$	bl.	n.	Fenny Stratford, Bucks.
171	59	198	155	782	5 3	br.	l.	Amptill, Beds.
172	25	202	156	772	5 7	br.	l.	Bucks.
173	37	189	147	777	5 7 $\frac{1}{2}$	br.	l.	St. Albans.
174	25	195	148	759	5 5	d.	l.	S. Bucks.
175	20	195	148	759	5 7	br.	l.	High Wycombe.
176	45	199	150	753	5 8	d.	l.	Tring district.
177	18	197	152	771	5 8	d.	d.	Stony Stratford district.
178	40	200	153	765	5 4	bl.	d.	Dunstable and Cheddington.
179	44	200	154	770	5 8	br.	l.	Moreton, near Thame.
180	27	206	152	738	5 6	br.	l.	Horwood.
181	42	200	151	755	5 7	br.	l.	Fenny Stratford.
182	21	189	149	788	5 7 $\frac{1}{2}$	br.	d.	Shenley, Bucks.
183	47	205	151	736	5 9	br.	d.	Newton Longville, Bucks.
184	46	195	154	789	5 4	br.	l.	Wendover.
185	50	199	155	778	5 9	br.	d.	Cheddington.
186	25	203	158	778	5 4 $\frac{1}{2}$	br.	d.	Mursley.
187	33	207	152	734	5 3	bl.	l.	Dunstable.
188	32	189	151	793	5 8	br.	n.	Newport Pagnell (Filgrave).
189	54	192	146	760	5 6	d.	n.	Bletchley.
190	42	198	151	762	5 6	d.	d.	Maids Moreton, N.W. Bucks.
191	31	202	151	747	5 4	f.	n.	Ridgmont, Beds.
192	44	212	160	754	5 9	d.	d.	Dunstable.
193	30	203	158	778	5 11 $\frac{1}{2}$	f.	l.	Fenny Stratford.
194	45	197	151	766	6 0 $\frac{1}{2}$	bl.	n.	Bletchley.
195	47	184	150	815	5 5 $\frac{1}{2}$	d.	l.	Cheddington.
196	18 $\frac{1}{2}$	189	144	761	5 4 $\frac{1}{2}$	br.	n.	Cheddington (son of No. 195).
197	55	210	155	738	5 9	bl.	d.	Fenny Stratford and Northants.
198	47	190	144	757	5 7	br.	l.	Wing, Bucks.
199	19	205	149	727	5 9	br.	n.	Leighton Buzzard.
200	39	208	158	759	5 8	br.	l.	Welland, Northants.
201	36	191	155	812	5 7 $\frac{1}{2}$	f.	l.	Buckingham and Stony Stratford, N. Bucks.
202	46	197	151	766	5 4	d.	l.	Eversholt, W. Beds.
203	21	198	149	753	5 11 $\frac{1}{2}$	br.	l.	Eversholt, W. Beds.
204	29	186	142	763	5 0 $\frac{1}{2}$	d.	l.	Hanslope, N. Bucks.
205	44	189	153	810	5 8	br.	l.	Ivinghoe and Tring, Bucks.
206	24	193	150	777	5 7	f.	l.	Wavendon, W. Bucks.
207	39	190	145	763	5 5	br.	l.	Newton Longville, N. Bucks.
208	41	199	153	769	5 7 $\frac{1}{2}$	br.	l.	Tichmarsh, Northants.
209	21	200	161	805	5 10	br.	l.	Mid Bucks.
210	42	194	149	768	5 8 $\frac{1}{2}$	bl.	n.	Eversholt, E. Beds.
211	37	197	152	772	5 10	d.	d.	Stony Stratford, N. Bucks.
212	24	194	148	763	5 3 $\frac{1}{2}$	d.	l.	Towcester, Northants.
213	36	188	145	771	6 0	br.	l.	Ridgmont, W. Beds.
214	36	194	144	742	5 6	d.	d.	Winslow and Horwood, N. Bucks.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
215	51	190	150	789	5 8	br.	n.	Bletchley and Buckingham.
216	55	197	156	792	5 8	br.	l.	Bletchley.
217	44	189	149	788	5 4½	d.	n.	Gt. Brickhill, N. Bucks.
218	35	196	158	806	6 0	d.	d.	Mursley, N. Bucks.
219	22	191	148	775	5 5½	br.	l.	Fenny Stratford, N. Bucks.
220	27	190	149	784	5 9½	br.	n.	Whaddon, N. Bucks.
221	22	192	147	766	5 9	br.	n.	Bletchley, N. Bucks.
222	31	194	150	773	5 8	d.	l.	Fenny Stratford, N. Bucks.
223	26	187	147	786	5 5	r.	n.	Leighton Buzzard, W. Beds.
224	43	195	156	800	5 8	d.	n.	Fenny Stratford and Buckingham
225	30	203	149	734	5 9	br.	n.	Bletchley.
226	52	196	148	755	5 4½	br.	l.	Aspley Guise, Woburn, W. Beds.
227	23	191	148	774	5 10¾	br.	l.	Fenny Stratford, N. Bucks.
228	22	194	156	804	5 7	d.	d.	Stewkley, E. Bucks.
229	21	192	144	750	5 9¾	f.	l.	Aspley Guise, Woburn, W. Bucks.
230	20	192	151	786	5 7	f.	n.	Drayton Parslow.
231	46	207	157	758	5 7½	br.	n.	Stewkley, E. Bucks.
232	26	201	152	756	5 9	br.	d.	Drayton Parslow.
233	22	206	153	742	5 9½	f.	l.	Drayton Parslow (cousin of No. 230 and 232).
234	43	194	149	768	5 4½	r.	l.	Lidlington, Mid Beds.
235	23	203	152	748	5 7	r.	l.	Brackley, S. Northants.
236	19	200	160	800	5 3	d.	d.	Bletchley.
237	26	189	147	777	5 6	bl.	d.	Winslow District, Mid Bucks.
238	26	201	157	781	5 8½	br.	l.	Twyford and Winslow districts.
239	17	195	151	774	6 1	bl.	d.	Northants.
240	17	195	156	800	5 10½	br.	l.	Woburn.
241	28	203	159	783	5 5½	f.	l.	Wheatley, near Oxford.
242	31	200	155	775	5 10½	d.	d.	Astwood, N. Bucks.
243	27	200	151	755	5 5¾	bl.	d.	Eaton Bray, W. Beds.
244	42	196	149	760	5 6½	d.	d.	Grendon Underwood and North Marston, Mid Bucks.
245	22	190	152	800	6 0	br.	l.	Ridgmont.
246	34	183	148	809	5 3½	br.	d.	Daventry, S. Northants.
247	45	196	149	760	5 7	f.	l.	Bow Brickhill, N. Bucks.
248	22	187	154	812	5 7	br.	d.	Aspley Guise, W. Beds.
249	45	193	145	751	5 5	f.	l.	Gt. Brickhill.
250	22	192	162	843	5 9	d.	d.	Gt. Horwood, Mid Bucks.
251	33	199	147	738	5 7¾	br.	l.	Shefford district.
252	35	204	154	755	5 8	br.	l.	Linslade and Leighton Buzzard.
253	44	190	142	747	5 0	br.	n.	Gt. Horwood, Mid Bucks.
254	18	199	159	800	5 10½	d.	l.	Chesham, S.E. Bucks.
255	20	209	149	713	5 7½	d.	l.	Bletchley district.
256	21	192	150	781	5 7½	br.	d.	N. Crawley, N.E. Bucks.
257	50	204	156	764	5 9	d.	n.	Fenny Stratford.
258	35	190	157	826	5 5½	bl.	d.	Berkhamsted.
259	30	183	145	792	5 4½	br.	d.	Woburn district, W. Beds.
260	24	182	144	791	5 3½	r.	d.	Ridgmont district, W. Beds.
261	31	195	148	759	5 10½	br.	d.	Oxfordshire and Mid Bucks.
262	20	197	151	766	5 6½	d.	l.	Bletchley.
263	28	195	148	759	5 4½	br.	n.	Oxfordshire.
264	30	201	153	762	5 1½	f.	n.	Husborne Crawley, W. Beds.
265	24	197	153	776	5 8½	d.	d.	Linslade, E. Bucks.
266	21	186	145	779	5 2½	br.	l.	Mursley and Stoke Hammond, N.E. Bucks.
267	58	198	153	772	5 8	br.	l.	Cambridge and Beds. (Potton).
268	35	204	148	725	5 7	bl.	d.	Weedon (Northants) and Bletchley.

Number.	Age.	Head Length.	Head Breadth.	Cephalic Index.	Height.	Hair Colour.	Eye Colour.	Ancestry.
269	40	191	150	785	5 5	d.	n.	Wing, E. Bucks.
270	37	192	150	781	5 4½	br.	l.	St. Albans.
271	35	194	148	762	5 9	br.	d.	Simpson.
272	47	196	156	796	5 1	br.	l.	Gt. Brickhill.
273	30	206	159	771	5 11	br.	d.	Berkhamsted.
274	24	184	157	853	5 10½	d.	d.	Aylesbury (seven generations).
275	57	183	149	814	5 8	br.	n.	Fenny Stratford.
276	54	197	153	776	5 6	br.	n.	Mursley, N.E. Bucks.
277	41	188	143	760	5 5	br.	l.	Leighton Buzzard, S.W. Beds.
278	26	182	143	785	5 5	br.	l.	Dinton, near Aylesbury.
279	19	191	147	769	5 10	f.	l.	Buckingham neighbourhood.
280	18	195	146	748	5 7	f.	l.	Bletchley neighbourhood.
281	23	189	140	740	5 8	d.	d.	Mursley, N.E. Bucks.
282	30	190	148	778	5 6	f.	l.	Brickhill and Stewkley.
283	17	189	144	761	5 3	f.	l.	Lidlington, N.W. Beds.
284	32	190	144	757	5 5	f.	l.	Drayton Parslow, Mid Bucks.
285	17	184	150	815	5 4½	r.	l.	Northants.
286	38	196	149	760	5 6½	d.	n.	Roads, Northants.
287	33	187	154	827	5 6½	br.	l.	Bow Brickhill and Milton Keynes.
288	25	199	155	778	5 8	br.	l.	Simpson and Woughton.
289	26	190	144	758	5 8	br.	d.	Watford, Herts.
290	18	190	152	800	5 9¾	d.	l.	Ridgmont, Beds., and district.
291	25	197	153	776	5 11	bl.	l.	Cambridge and district.
292	36	193	146	756	5 6	f.	l.	Watford and Wycombe.
293	22	198	149	752	5 9¾	f.	l.	Trumpington and Cambridge.
294	25	190	155	815	5 5½	f.	l.	Bromham, W. Beds.
295	21	203	150	738	5 4½	f.	l.	Newton Longville.
296	36	193	158	818	5 6½	d.	n.	Woburn.
297	30	195	160	820	5 9	br.	l.	Tingewick, W. Bucks.
298	33	211	154	730	5 11	bl.	n.	Fenny Stratford.
299	41	197	163	827	6 1	d.	d.	Newport Pagnell, N. Bucks.
300	26	191	150	785	5 8½	bl.	d.	Potton, E. Beds.

HEAD SHAPE.

Taking, in the first place, the head shape, it will be seen that the average length is 195 mm., the average breadth 151.5 mm., and the average index 777. In order to get an idea of the range of variation, by far the most graphic method is to arrange the observations in the form of a chart (Fig. 1), which shows in centimetres the distribution of each of the 300 observations, but for comparison with other charts it is necessary to reduce this to percentages, as has been done in Fig. 2.

When these are examined, it will be seen that the mass of the material lies between the indices of 75 and 79, and that the apex just reaches the 15 per cent. line, as it always does in a chart of a homogeneous race containing sufficient observations to make generalization safe. It will be noticed that there is no attempt at a double apex, such as is met with when two races with different cephalic indices are dealt with.

From the chart, it appears that 35 of the 300 observations are under an index of 75 (dolichocephalic), 40 over an index of 80 (brachycephalic), while the rest are between 75 and 80 inclusive (mesaticephalic). This, however, is only approximate, since, for the chart, the indices are necessarily only recorded to two figures. When the actual lists, in which the indices are recorded to three figures are consulted, it

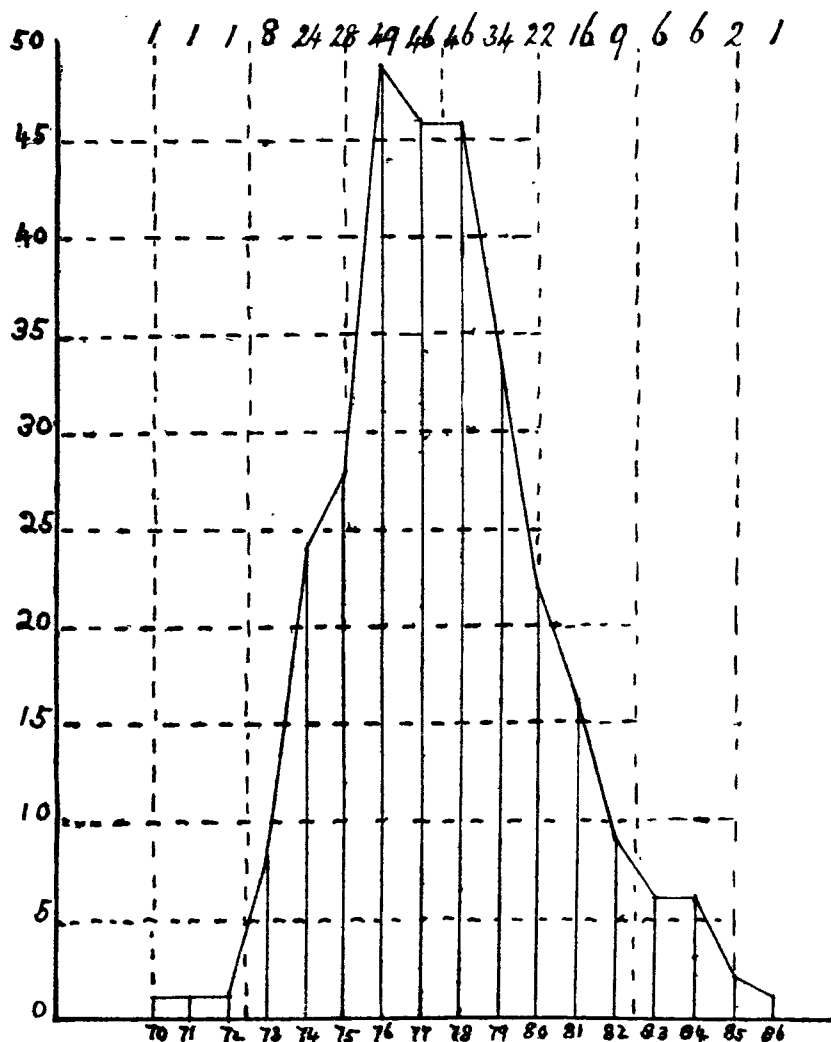


Fig. 1.

will be seen that 44 (14·7 per cent.) are dolichocephalic, 48 (16 per cent.) brachycephalic, and 208 (69·3 per cent.) mesaticephalic.

As far as our observations go, this is a representative result for heads of the English uneducated classes, and agrees very closely with what we found in the wards of a large London Hospital.

A more mathematical way of stating the range of variation is to work out the coefficient of variation, which is 3·4. This is less practically useful because it is seldom done, and we have, therefore, so little with which to compare it, but during the war we had the opportunity of measuring 124 wounded soldiers from all parts

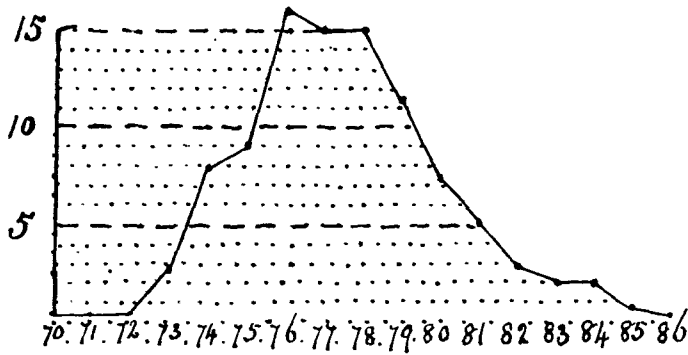


Fig 2.

of the British Isles, and their coefficient was 3·7. It seems, therefore, as one would expect, that these Chiltern people are rather more homogeneous in their head shape than are those taken at random from all over the British Isles, though the difference does not amount to very much.

STATURE.

In the lists, the column after that devoted to the cephalic index deals with height, and the record of 298 cases gives an average height of 67 inches or 1702 mm.

The height of 5 feet 7 inches is almost certainly above, rather than below, the average for the whole of England, though it is difficult to say what that average at the present time is.

We have, however, the militia rolls in 1797 of 155 men of the Newport hundreds, which corresponds fairly closely to the district in which we are interested, and they give us an average of 5 feet 5·3 inches. The comparison must not, of course, be pressed too closely but, for what it is worth, it suggests that the rural population of these parts is advancing rather than receding in height, and it certainly does not favour the view that there is any large inclusion of Mediterranean blood in the area. In using it, one must remember that Anglo-Saxon skeletons seldom average more than 5 feet 6 inches for males, while the Mediterranean remains suggest an average of 5 feet 4 inches. We do not know where to go for the average height of the modern Londoner, but we feel sure that, even excluding the foreign elements in the East End, it would not exceed 5 feet 6 inches.

The well-nourished upper middle classes, from which Medical Students are drawn, give an average of 5 feet 9 inches.

Too much stress, however, should not be laid on height as a racial index, since it reacts very quickly to good nourishment and plenty of oxygen in the growing age, and the increased height of these people, like increased longevity, should probably be regarded more as a sign of better surroundings than of any racial origin.

HAIR COLOUR.

The hair colour has been estimated on the lines suggested by one of us in "The Colour Index of the British Isles"—*Journ. Roy. Anthropol. Inst.*, vol. I, p. 159, with the following result :—

Fair	..	..	..	..	..	41 = 13·7%
Red	..	..	..	..	..	12 = 4·0%
Brown	..	..	..	..	..	132 = 44·0%
Dark	..	..	..	..	..	83 = 27·7%
Black	..	..	..	..	..	32 = 10·7%
						<hr/>
						300 = 100·1
						<hr/>

This gives an index of 38·4, which is certainly higher than the average index shown in the chart for the Eastern and East Midland Counties as well as for London, and we think that special stress should be laid on the large percentage of black-haired individuals because, on referring to the lists on pp. 168, 169 (*loc. cit.*), it will be seen that an average of 11 per cent. of black hair is, hitherto, only met with in the West of England and in Wales.

EYE COLOUR.

The eyes have been tabulated as Beddoe tabulated them under the heads of light, neutral, and dark, an arrangement which, to a certain extent, eliminates the personal equation of the observer.

Light	..	..	..	..	..	..	168
Neutral	..	..	..	..	..	..	58
Dark	..	..	..	..	..	..	74
							<hr/>
							300
							<hr/>

The neutral eyes are then divided equally between the light and dark, thus giving :

Light	..	..	..	..	..	197 = 65·7
Dark	..	..	..	..	..	103 = 34·3
						<hr/>
						300 = 100·0
						<hr/>

The percentage of dark eyes is taken as the colour index of the eyes, and when this is compared with the lists on pp. 168, 169, or the charts on pp. 170, 171, of the paper referred to above, it will be seen that 34·3 is about the average for the Eastern and Central Counties and also for London, which, in nigrescence of both hair and eyes is about the average of the whole kingdom. In connection with this, we must quote Mr. Andrews, an Exeter observer, who assures us that the people in the West Country of purest Mediterranean characteristics have black hair and light eyes.

However, this may be, we may fairly claim that the outstanding feature of the North Chiltern area is the large percentage of black-haired individuals, and this is probably the feature which has attracted the attention of so many observers and may, for all we know, be localized in patches in certain parts of the area, although, up to the present, they have failed to be pointed out to our satisfaction.

On picking out the thirty-two black-haired individuals, we find that their percentage of dark eyes is 70·3 against the 34·3 per cent. of the whole series, showing, that in this part of the country at least, black hair is usually, though not always associated with dark eyes. The point is worthy of notice, however, because it is probable that in Ireland or even the West of England the percentage of light eyes with black hair would be far higher than this.

The average height of the thirty-two black-haired people is 5 feet 7·6 inches instead of 5 feet 7 inches, which is the average of the whole number examined, and we cannot regard a difference of half an inch as of any real significance in so small a number.

The average cephalic index of the 32 is 768, against the total average of 777, and this is decidedly more significant as showing that the black-haired people are distinctly longer headed than are the average North Chiltern dwellers, and in this respect approach the Mediterranean or Long Barrow more than the Anglo-Saxon type.

It has been suggested that the dark people in this area are not of Mediterranean, but of dark Alpine, origin, but this suggestion is negatived by the fact that the black-haired people have longer, rather than shorter, heads than the rest ; we were even a little uncertain whether the short-headed people would prove to be darker than the average, so we picked out the fifty-six individuals with a cephalic index of 80 or over and found that their index of nigrescence was 40·3, while that of the whole series of 300 was 36·35.

Three hundred is a small series from which to determine nigrescence, and an increase of four degrees in coloration indices means much less than the same amount in the cephalic index ; still each contribution adds to the general sum, and this one, as far as it goes, suggests that, as the round-headed people are rather darker than the average of the district, the district must contain a large excess of Nordic blood, with which the black-haired Mediterranean is mixed.

With regard to the distribution of the black-haired individuals we get little help from plotting them out on the map; by far the greater number comes from N. Bucks, whence most of our material is drawn, and the rest is scattered irregularly. We can only say that we have no reason to believe that there are special patches of dark coloration, though the subject is worthy of further investigation.

CONCLUSIONS.

The conclusions we have drawn from our two years' work are :—

1. That about half the working-class rural male people in the North Chiltern area can trace their ancestry back for three generations to some part of the same area.
2. That the hair colour, as shown by the index of 38·4, is rather darker than Beddoe found as the average of the Eastern and East Midland Counties, but that in the percentage of black-haired individuals (10·7 per cent.) it was higher than in any other part of Great Britain except the South-western Counties and Wales.
3. That the eye colour index (34·3) is about the same as that for London and the East Midlands.
4. That the average cephalic index of 777, with a coefficient of variation of 3·4, is practically what one finds in the modern working-class Londoner, but the black-haired individuals have an average index of 768.
5. That the average height was 5 feet 7·0 inches and the black-haired individuals had practically the same average.
6. That the black-haired people seem to be evenly distributed over the Chiltern area.

We are therefore of opinion that the present-day inhabitants of the North Chiltern area, who are not recent immigrants, are distinctly darker haired than those surrounding them; and the facts at our disposal make us think that this darkness is due to the survival of a greater proportion of Neolithic or Mediterranean blood in the district.

CELESTIAL AND TERRESTRIAL ORIENTATION OF THE DEAD.

By H. J. ROSE.

ALTHOUGH the technical terms which form the title of this paper are, I believe, new the customs to which they refer are familiar and have often attracted attention. To take perhaps the best-known instance, it is the usual practice throughout Christendom to inhumate the dead in the extended position, with the head to the west and the feet to the east, or, more accurately, to the sunrise (hence the well-known small deviations in the orientation of churchyards, corresponding to the time of year at which they were consecrated). For this, a beautiful symbolic explanation has been found: as the Incarnation took place in the East, so also will the Second Coming, and it is fitting that the believer should rise facing his Lord. As a pious fancy, derived presumably from the application to Christ of the Old Testament phrase "Sun of righteousness," this is charming; but it is well known that the rite itself is far older than Christianity.

Islam is also careful to place its dead in a particular way, but the principle is different. The dead man is so laid that his face is turned towards Mecca; therefore, instead of always facing east, he may be turned towards any point of the compass, according to the locality in which he happened to die. Such an idea is to be found also here and there among Christians, who interpret the eastward position as a turning towards Jerusalem; whence, I am informed, some churchyards which lie east of Palestine are oriented west.

I use the word *orientation* in a sense not justified either by its etymology or by the use of the cognate verb in French. I mean by it the arrangement of anything—in the subject now under discussion, a buried body—so as to point in some definite direction. By pointing I mean facing, *i.e.* lying so that the face of the corpse is turned in the given direction. This, I am led to believe, is normally the significant part of the arrangement. The exceptions which I have come across are few. I know of one instance of what I call the "funeral banquet" arrangement, in which the bodies present the tops of their heads towards the common centre,¹ and in the discussion which followed the original reading of this paper before the Institute, Professor Elliot Smith brought forward a case from Egypt in which the bodies of an invading race lay with their heads turned towards their country of origin. Perhaps someone may be able to answer the question

¹ See D. I. Bushnell, in *Bull.* 71, *Bureau of Amer. Ethnol.* Washington, 1920, p. 47; the bodies in question lay head to centre around a kind of altar.

whether in such cases the soul, as in the speculations of some mediæval physicians, was thought to be located in the top of the head, and perhaps to depart through the sutures of the skull.

By *celestial orientation* I mean an arrangement whereby the body faces some point in the heavens—as dawn, sunset, or the north. The Christian rite is the most generally familiar instance of this. *Terrestrial orientation* is that in which the body faces some point, real or imaginary, near or far, on the surface of the earth: as Mecca, the *alcheringa* camp, the hut or village, the Islands of the Blessed. In practice, these two methods are often hard to distinguish, especially over small areas, *e.g.* a Muslim grave which happened to lie due west of Mecca would have the body oriented in the same manner as that of a Christian, so far as the direction of the face was concerned. I will return to this point later.

I.—HUT-BURIAL AND ALLIED CUSTOMS.

Before beginning to discuss orientation proper, however, I must mention a series of phenomena which, in my opinion, give the clue to the significance of terrestrial orientation, and may be regarded as the logical, if not the historical, source of it. It is a widespread custom to bury the dead in or near their dwelling-place, and to continue to use the locality for the habitation of the living. Thus, the Wa-Sania¹ bury a still-born child, or one who has died in the first eight days of life, in the house; on the left as you go in if the baby was female, on the right if it was a male. A circumcised Kikuyu male is buried facing his hut.² Among the Wa-Wanga a married man is buried in the hut of his chief wife, face to the door; while females, unmarried males, and children are laid under the verandah, feet to the door. Those who die by violence, however, are not buried in the hut at all.³ The Kitui of the East African Protectorate bury an elder or a chief wife inside the village. In the case of the latter, the husband sits beside another wife, with whom he must that night have sexual connection, while the father of a dead child (whose body is merely thrown out into the bush) must cohabit with the mother that same day.⁴ Burial in the hut, or, in the case of chiefs, under the village midden, is also found among the Bahima.⁵ The Wa-Gogo of ex-German East Africa also sometimes bury in the village courtyard⁶; the Nilotic Kavirondo in the hut, which continues to be occupied by the living also.⁷ Passing to Australia we get many evidences of a desire to keep the living in close physical contact with the recently dead, giving rise to such practices as eating the corpse.⁸ The Mekeo

¹ *Journ. Roy. Anthropol. Inst.*, xli, 1911, p. 34.

² *Ibid.*, xliii, 1913, p. 33.

³ *Ibid.*, p. 675.

⁴ *Ibid.*, xxxvii, 1907, p. 63.

⁵ *Ibid.*, p. 418.

⁶ *Ibid.*, p. 521.

⁷ *Ibid.*, xxxii, 1902, p. 313.

⁸ *e.g.* Howitt, *Nat. Tribes of S.-E. Australia* p. 450.

of British New Guinea bury the dead man in his own village¹; in Asia the Nagas do the same, "often at the very door of the deceased person's hut."² The cave-dwellers of Perak seem to have buried in the cave,³ and the much more civilized Malays of that region bury at least very near the house, in the garden. In South America the Chunchos, who "have no religion at all," are stated to bury in the hut; the Iasaunas or Papuanas do the same, as also the half-legendary Omaguas. The Uaraycus cremate and bury the ashes in the hut, while the Cocomas or Cucumas and the Ximanas eat their dead more or less completely.⁴ In our own continent we have some rather unreliable traditions of burial of adults, and more credible ones of burial of infants, in the house from early Italy⁵; while a Welsh song, "Yr hen wr mwyn," preserves to this day the tradition of times when a man might be buried under his own hearthstone, as more than one English proprietor has been in his own fields, and as the round-barrow men on occasion were in their huts.⁶

All these rites, and others like them, seem to me obviously to point in one direction, namely, the belief in re-incarnation. In Australia, we know that such a belief exists in an elaborate form; the dead, while they may pass into a pleasant underground Hades, sooner or later go each to the *nanja* appropriate to him, there to be associated with a *churinga*, and in due time to pass into the womb of some woman.⁷ The Wa-Wanga console their dead, if married males, by the promise that a posthumous child or grandchild shall bear the name of the deceased, while a dead wife is assured that her husband will take a wife who shall be re-named after her. Re-incarnation is a familiar enough doctrine in America, where it has got into literature, in Longfellow's *Hiawatha*, in connection with the adventures of Pau-Puk-Keewis, while any collection of Indian stories, e.g. Mooney's *Myths of the Cherokee*,⁸ will furnish more examples. For the classical civilizations I may refer to my article in the *Classical Review* for November-December, 1920; and for England and Wales it was a commonplace of antiquity that the "Kelts" believed in re-incarnation as devoutly as any Pythagorean. Thus, wherever we have found hut-burial and allied customs, we have found re-incarnation also, and the belief offers a reasonable explanation for the custom. The dead are buried near, or in, their old homes, because they are wanted back again, in the form of babies born of women of their own clan, tribe, or family.

This is in no way inconsistent with the widespread fear of the dead and avoidance of them which is familiar to us from such works as Frazer's *Belief in Immortality*. Reference to any of the works above quoted, or to any others giving an account of savage, barbarian, and peasant beliefs, will provide countless instances of a most lively fear of the dead, precautions taken to escape the dangerous

¹ *Journ. Roy. Anthropol. Inst.*, xliii, 1913, p. 287.

² *Journ. Roy. Anthropol. Inst.*, i, 1872, p. 129, cf. xxvi, 1896-97, p. 194, ff.

³ *Ibid.*, p. 45.

⁴ *Ibid.*, xl, 1910, pp. 73 ff.

⁵ *Class. Rev.*, 1921, p. 154.

⁶ Mortimer, *Forty Years' Researches*, pp. 155, 328.

⁷ See especially Spencer and Gillen, *Nat. Tribes of Central Australia*, chapter xv.

⁸ p. 261.

magnetism which they exercise over the living, etc. But Mother Earth, which is the grave of the dead, is also the source from which baby spirits come. In other words, the latter are purified ghosts, no longer dangerous. The beliefs in this connection are as it were epitomized in the well-known Greek ceremonial used in the case of one falsely reported dead for whom the funeral rites had been celebrated.¹ Such a one had to go through an elaborate pretence of being a new-born child, being swaddled, bathed, and suckled by the women, *i.e.* having made him over to the dead, his people gave him the same treatment as any other dead man, and welcomed him back as a baby.

II.—TERRESTRIAL ORIENTATION.

But though the belief in re-incarnation, and the consequent return of the dead tribesmen as babies, is widely diffused, it is not always, or even very often, strong enough to overpower the fear of the ghost which is not yet ready for re-birth. The desertion of the house of death is a familiar phenomenon, and, to take one of the areas already dealt with, such things as the plot of the *Mostellaria* of Plautus,² the command "hominem mortuom in urbe ne sepelito neue urito,"³ and the regularity with which we find cemeteries, Greek and Roman, outside the city walls, show clearly what the attitude of these peoples was in classical times. Long before the belief in re-incarnation ceased to be very clearly held, as it has ceased in many parts of the world, the idea must have occurred that the dead would be better placed somewhere not too dangerously near, yet so arranged that it would be easy for them to return, in the fullness of time in their ultimate baby form; and in the meanwhile, for the purpose of attending soul feasts. Hence, as I believe, we get terrestrial orientation, or the arrangement of the body to face either its old home or some place to which the soul must, for some reason, go before being re-born. We have already seen that the Nagas sometimes place the grave "at the door" of the dead man's hut, but so simple an arrangement is rare. Very early, it would seem, the idea springs up that there is some sort of a ghostly clearing-house through which all normal spirits, or all those of a particular class, must pass on their way to re-birth.⁴

¹ Plut., *quaest. Rom.* 5.

² A man is frightened away from his house by being told that a murdered man is buried under it and haunts it, claiming it as his own abode, since being untimely dead, he cannot get into Hades. The plot is Greek, but the Roman audience would have no difficulty in appreciating it.

³ *XII Tables*, x, fr. 1, Bruns.

⁴ Theory and practice do not by any means always keep pace. For example, the Edo (see *Journ. Roy. Anthropol. Inst.*, vol. l, 1920, p. 380, ff.) bury in the house or sometimes under the eaves; this, if they were inhumanly consistent, should mean that they expected the dead to be directly re-born. But their funeral songs (pp. 381, 386) show clearly that they think he will go to *elimi* or heaven, stay there for some time, be able to give fertility and other blessings to his descendants, and finally come back (p. 386, "my father . . . tell Osa to give you things when you come back"). The nearest approach to perfect consistency is perhaps the fairly widespread custom of burying a young child in the house even when adults are buried elsewhere. The baby has died so young that he needs hardly any preparation to become once more a baby-spirit.

Of this we get clear enough traces in Australia, where the normal orientation appears to be facing the *alcheringa* camp,¹ though other forms are to be found. Now the *alcheringa* camp is no shadowy Hades of the Homeric type, but a perfectly real spot, the whereabouts of which is well known to the observers of the rite. In particular, such a spot is apt to be the real or supposed original habitat of the dead man's people.

My attention was first drawn to this topic by the admirable article of W. J. Perry on *Orientation of the Dead in Indonesia*,² in which he shows, as it seems to me conclusively, that for the region in question the dead are regularly so arranged. Other regions have been less accurately and carefully studied; but the Journey of Souls through a known district to a known spot is common enough, as in the cases of the Kiwai Papuans,³ the Slade Islanders,⁴ and very many others, especially, of course, those who have moved recently enough to have some fairly clear tradition of the region whence they came. For all such Hades is simply the original habitat of their people. The reasoning is apparently simple enough: as the dead man must go home to be re-born, he had better begin by going really home. But once he is headed anywhere away from the place where he lived, the idea that he is going to a permanent abode of the dead has a chance to grow up, if indeed it has not already appeared. In many instances we can see the conflict of the old and new beliefs. Thus, to take examples from races very far apart geographically and culturally, the Cherokees (Mooney *loc. cit.*) hold that the dead are re-born a limited number of times only, while the Orphic-Pythagorean adepts of Greece and Italy cherished a similar belief, joined to a lofty ethical doctrine. (Pind., *Olymp.*, II, 68 ff.)

One very interesting point raised by Mr. Perry's article, though not worked out by him, is that of roads of the dead. He notes (p. 285) that the Olo Ngadjoe of south-east Borneo, whose Hades lies up a river, do not point their dead directly at their ultimate goal, but simply lay them parallel to the stream. With this I would combine the remark of Sophus Müller,⁵ that many Danish tumuli are arranged in lines more or less at right angles to prehistoric roads; the fact that in New South Wales⁶ we have a similar arrangement of aboriginal graves along the famous native ridgeway leading west from Mount Warning; the existence, along another ridgeway, in Wales this time, leading west from Plynlimmon, of lines of tumuli; and the countless classical instances of grave-bordered roads.⁷ If the

¹ Spencer and Gillen, *loc. cit.*, p. 496.

² *Journ. Roy. Anthropol. Inst.*, xlv, 1914, p. 281, cf. *Folk-Lore*, xxvi, p. 138.

³ Landtman in *Festskrift tillegnad E. Westermarck*.

⁴ Rev. Geo. Brown, *Melanesians and Polynesians*. London, 1910, p. 443.

⁵ Quoted by Déchelette, *Man. d'Archéol.*, vol. ii, p. 131.

⁶ Verbally from Clark Bonham, Esq., of Sidney. The natives in that neighbourhood fear the sea (which many of these graves face) and say they come from the north.

⁷ *Class. Rev.*, 1920, p. 145.

dead are to go anywhere they must go by some route, whether sea or land ; and consequently we must be on the look-out for roads of the dead, not necessarily separate from those used by the living.

Another point must not be forgotten. When it is said that a particular population orient their dead (say) on Mount Kilimanjaro, or on Samoa, it is not generally meant that everyone who dies is without exception turned that way. There are always a certain number whose bodies receive a different treatment, whether from causes creditable to themselves or the reverse. I need not dwell upon the very many instances of a special treatment accorded to suicides, victims of epidemics, women dead in childbirth ; and, on the other hand, to great chiefs, warriors killed in battle, and so forth. One form of this different treatment is surely different orientation, or orientation for some and not for others. The belief takes many forms. Thus the Elemas of the Papuan Gulf, of whose use of orientation, if any, I can discover nothing, hold that the ordinary dead go to Hades ; the victims of crocodiles stay where they are, *i.e.* inside the beast, and amuse themselves by plaguing the living ; while the ghosts of fallen warriors go to join Hiovaki, the war-god in the sky.¹ Among the Wa-Gogo the belief, or at least the practice, is much simpler ; the two sexes are so buried as to face different ways.² The ancient Kolchians, if we can believe Apollonios of Rhodes (*Argon.*, III, 200 ff, *cf.* Nymphodoros ap. Schol. *ad loc.*), practised tree-burial for men and inhumation for women. The undesirable ghosts, I take it, are pointed the wrong way, or no way in particular, in hopes that they will be lost ; but the super-excellent ones are too good to be re-born.

I, therefore, conclude that the practice of terrestrial orientation is good *prima facie* evidence of the prevalence, at least originally, of the belief in re-incarnation among the people practising it. But I would not be guilty of an illicit conversion of the proposition, "if terrestrial orientation, therefore re-incarnation," into "if re-incarnation, therefore terrestrial orientation." Quite apart from the endless instances of illogical or decayed belief or practice, it might perfectly well be supposed, even in the same locality and by the same stock, (*a*) that the dead man was coming back again and therefore should be faced in the right direction, (*b*) that only his soul, or one of his souls, was coming back, and therefore it mattered little what became of his body.

III.—CELESTIAL ORIENTATION.

In this connection the evidence is so abundant that I can give only a brief selection from those examples which I happen to have met with. The commonest theory with regard to orientation in general is that it is somehow connected with a sun- or star-cult, which, however inadequate it is for terrestrial orientation, has

¹ *Journ. Roy. Anthropol. Inst.*, xxxii, 1902, p. 428.

² *Ibid.*, 313.

to be examined in the case of celestial. It should be noted in passing that not all the lower races are capable of it. Thus the Yurok¹ of the Pacific coast of North America possess no words for the points of the compass, but simply say "up river" (the Klamath), "down river," and the like. On the other hand, the Australian aborigines undoubtedly do use some kind of reckoning of direction, based, I suppose, upon the apparent position of the sun or of certain stars.² To begin once more with them, we find the boomerang-shaped graves of Maranoa with their convex side turned west.³ So far as I know, there is no evidence of a sun-cult among the Maranoans. In Africa we have the cases of the Ba-Mbala and the Ba-Huana, who inhume their dead with an eastward and a westward position respectively. Neither has a sun-cult, both believe that the soul, or one of the souls, may be re-incarnated in a beast. The Ayao and the Atonga of Portuguese Zambesia turn the head of the corpse west, with the eyes directed north-west, "to see the new moon on the first day." They do not appear to worship the moon at all.⁴ The Saxons would not be correctly described as sun-worshippers, yet their normal (not, as I will shortly point out, their only) orientation is west to east,⁵ so that it is not easy to determine whether a given Saxon burial be Christian or pre-Christian, unless the burial with the corpse of arms or the like suggests pagan rites, or some other indication of date is present. Other monuments again are celestially oriented, as for instance, Greek temples, in a civilization where the sun was scarcely worshipped at all (outside Rhodes), and attempts to derive other deities, such as Apollo, from an original sun-god have failed completely.

But if solar orientation (for the other forms of celestial orientation are comparatively rare) does not connote sun-cult, what is the explanation? I am inclined to think that two main ideas are at the bottom of these practices, whereof one implies belief in the continued life of the dead man in his grave, the other the entrance of his soul into a more or less permanent Elysium. Neither of these ideas in strict logic should co-exist with belief in re-incarnation, but in practice either of them can and frequently does.

(a) The second is perhaps the more obvious idea in this connection, and is abundantly vouched for by the Mediterranean evidence collected in Dieterich's *Nekyia*, to which we may add the many Keltic stories of Hy Brasil and the like. According to these and similar tales, there exists, not necessarily off the surface of the earth, but away from all known regions, a land of the dead, whose direction is marked usually by the apparent position of the sun at its rising or setting. The reason why these two points, or rather regions, should be chosen is probably, for the

¹ *Man*, 1920, p. 8.

² e.g. Spencer and Gillen, *loc. cit.*, p. 282.

³ Howitt, p. 476.

⁴ *Journ. Roy. Anthropol. Inst.*, xxxv, 1905, p. 417; xxxvi, p. 290; xxxvii, p. 121.

⁵ E. J. Mortimer, pp. 249, 386; *Journ. Roy. Anthropol. Inst.*, xli, 1911, p. 105.

west, that the west is the region whence darkness comes, and the dead live in a region of darkness or semi-darkness (see for the earliest literary Greek expressions of this idea, Hom. Od. XI, and compare his interchangeable use of 'Αἶδης and ἔρεβος), or else that in their world it is day when it is night with us (Pindar frag. 129, Christ). The latter is for Greece an Orphic-Pythagorean doctrine probably, but none the less likely to be popular in its origin. The east probably is connected with the notion that the abode of the blessed dead is a land of light, whose entrance is very naturally sought in the quarter where Phaëthon, like Maui, went to look for the abode of the sun. To take another Greek example, we should note that one of their fairylands, the kingdom of Aietes, is placed in the east, after showing a tendency to wander, in the shape of Kirke's island, into the west also. Neither of these ideas is inconsistent with a sun-cult, but also neither obliges us to assume one. Keeping these facts in view it becomes easier to understand why the Athenians and Megarians differed in their orientation, the one people facing their dead east and the other west.¹

But apart from different nations having different positions for Hades, the same nation might well vary its orientation for the reasons already given. I have pointed out that the idea of a world of the dead is commonly enough blended, not very logically, with the idea of re-incarnation. Suppose, now, that a community has decided that the normal ghost goes west to await re-incarnation; suppose, further, that it believes in a pleasant land on or off the earth, lying south, and that finally it has a certain number of magically undesirable members, who will not go to this southward heaven and are not wanted back again in a future generation. In such a community the bulk of the graves will be oriented east-west, a not inconsiderable number² north-south, and others will probably have no particular orientation. Now this is not a bad description of the burial ground of Megara Hyblaea in Sicily,³ where the orientation of the graves varies so that the learned excavators came to the conclusion that the Greeks of that time and place practised no sort of orientation at all.

Nor is it impossible to explain on this supposition such cases as that recorded in *Crania Britannica*, 51, 2, from White Horse Hill, Berks, where in a barrow of Romano-British date, obviously oriented, we find twenty-seven bodies looking east and nineteen west. I suggest that it was the common sepulchre of two intermarrying clans, or what had once been such, and that either had a different Hades from the other. It also explains why, in burial-places of any considerable size, it

¹ Plutarch, *Solon*, p. 10. See for discussion of this and parallel passages, *Class. Rev.*, *loc. cit.*

² Because of the universal tendency to exaggerate the good qualities of the deceased, if any passable case could be made out for him. So the famous Petilia tablets (Orphic) all seem to assume that the soul of the dead has passed to its final release, and will not be re-incarnated.

³ *Monumenti antichi*, vol. i, col. 773, cf. 750. The whole question of the orientation of burial-places on classical territory stands in need of further investigation, as many explorers seem to assume that unless all the graves point one way they are not oriented at all.

is next to impossible to find an example in which the orientation of all the graves is uniform.

(b) But such explanations do not clear up a difficulty which has several times attracted my attention, namely, that in the case both of graves and of other structures we very often (if not always) find, along with an orientation from east to west, another from north to south. Examples are : Greek temples (mostly west-east, but, for instance, that of Apollo at Phigaleia runs north-south) ; Italian *templa*, in which it was apparently always a matter of dispute whether the *cardo* should run north-south and the *decumanus* east-west or the other way about¹ ; Christian churches ; long barrows in Great Britain² ; Anglo-Saxon interments³ ; while of less widely spread examples, some of which seem to follow the principle of different funeral arrangements for different classes, I may cite the Etruscan or Etrusco-Faliscan cemetery at Narce, where the ordinary *tombe a fossa* run mostly east and west, but the more elaborate burials generally north and south.⁴

While here and there a local explanation may be found, as in the case last cited, where it may have been desired to put the dead Lucumo in a position resembling that of the gods, who lived in the north, or simply in the correct position of a diviner taking the auspices, the wide extent of the custom seems to call for an explanation based on practices common to many nations, and such a custom can, I think, be found and applied. Nilsson⁵ gives several examples, ranging from Sweden to Borneo, of oriented houses, in which a window or door lets in the sunlight which, shining on a post or the like, forms a rude sundial, or, with the aid of certain observed points outside the house, such as hills, or simply by the angle at which the light enters at noon, furnishes a rough sort of calendar. Such houses have usually the door or other opening to the south. A very similar arrangement is that in which the house or its window looks east, thus facilitating observation of the point of sunrise and of the apparent heliacal rising of stars. Now if the living thus provide themselves with clock and almanac, it is natural that the dead, conceived as living in their graves, should also be furnished with these conveniences. This also goes far to account for the orientation, in a manner reminding us of graves, of such distinctly unfunereal objects as temples of celestial gods. They, like their worshippers, want to know times and seasons.

This suggestion, among other things, enables us to account for such phenomena as the barrow of White Horse Hill, the neolithic graves recently explored in the Channel Islands⁶, in one of which, oriented east and west, two female bodies, buried

¹ Nissen, *Templum*, p. 12, ff.

² Greenwell-Rolleston, pp. 480, 501.

³ *Crania Britannica*, ¶ 20, 3 ; contrast refs. in ¶ 26.

⁴ *Monumenti antichi*, vol. iv, col. 133, ff.

⁵ *Primitive Time-Reckoning*, pp. 21, 28, 33.

⁶ *Archæologia*, 1902, p. 202, ff.

apparently with the same rites, have their heads one at either end, or the practice of the mixed tribes south of Lake Nyassa, who run the graves east and west, but lay the body indifferently on either side, and with the head at either end.¹ It matters but little whether the point observed be noon or sunrise, and also it matters little whether the occupant of the grave has to turn right or left to see the sun, once it is supposed that he can see it.

I conclude, therefore, that celestial orientation, unlike terrestrial, does not indicate belief in re-incarnation, though it may somewhat illogically co-exist with it; that it does not necessarily involve a cult of the sun or other heavenly bodies, although it does not disprove it.² What it does seem to indicate is a belief in the continued existence of the dead, either (a) in a Hades of some kind, or (b) in the grave itself.³

(c) I would here mention a third reason for celestial orientation, suggested by Dr. Marett, and worked out in some detail for the Eastern Mediterranean region in historical times by von Duhn.⁴ The Australian wurley or bivouac is regularly so placed that the rising sun shall shine full upon the sleeper within.⁵ The idea is simple enough, for the naked body of the black fellow is so cold and stiff by morning that he could hardly rouse himself otherwise. Many representatives of a much higher civilization have welcomed the rising sun for exactly the same reason, during the late war. The sun then may be intended to arouse the dead man from his sleep and give him strength for the journey of souls, whether to a permanent or a temporary Hades. Or, in a less naïve form assumed by von Duhn for such things as the graves of martyrs, and for holed dolmens which have their opening at the eastern end, light is life and thus the orientation of the grave serves by a very different method the same purpose as the familiar blood-offering. But this explanation, ingenious though it is, has the disadvantage that it does not clear up the differences in orientation already mentioned.

IV. DOUBTFUL ORIENTATIONS.

There are a great many orientations of which it is impossible to say at first glance whether they are celestial or terrestrial. Of those given in Mr. Perry's article already quoted, more than one might plausibly be thought celestial if the full

¹ *Journ. Roy. Anthropol. Inst.*, xl., 1910, p. 313.

² For instance, a race which worshipped the sun and believed in a Hades or a judgment of the dead might very reasonably turn their graves to the east, in order that the dead might appear before their god to be judged or welcomed. But, if so, *all* graves of that race should be oriented W.-E.

³ In the second case, the sun-calendar is not the only conceivable reason for orientation. Thus in Madagascar (*Journ. Roy. Anthropol. Inst.*, xxi, p. 229) the houses run N.-S., with the opening W., to avoid the cold S.-E. wind. A grave modelled on a house might well be so arranged for a similar reason.

⁴ *Archiv für Religionswissenschaft*, 1919, p. 441, ff.

⁵ Howitt, p. 773.

facts were not known. I add a few more examples: the Fijians suppose their ghosts to travel west, which is the direction from which their race is thought to have come.¹ Among the Lolos of Western China, souls go a journey to Taliang Mountain, the home of the race.² Among the Araucanos of Chile, the dead cross the sea to Hades, starting from the island of Mocha, and are consequently buried facing west and provided with journey money.³ If we did not know that these dead were meant to face the sea, we might easily be deceived into supposing a sun-cult or the like. Applying this to other instances, when we find, for example, the Kondayam-kottai Maraoars, a Dravidian people of southern India, turning the head of the corpse south on the funeral pyre,⁴ it is clear that we must not hastily assume celestial orientation, but consider the possibility that their dead are simply meant to look towards the more northerly parts of India, now occupied by invading races.

Is there then any test by which, in the absence of all further evidence, we may determine whether the orientation of a particular set of graves is meant to be celestial or terrestrial, *e.g.* whether the Maranoan graves mentioned under (III) are meant to face the sunset or some point on the earth's surface which happens to lie west of Maranoa? I am afraid that no very satisfactory criterion can be applied, but I suggest one or two which may be useful.

The first is the strong tendency, already remarked upon, to associate a north-south orientation with one east-west, both being celestial. This alone would, in my judgment, be enough to indicate, though not absolutely to prove, that a Greek temple had celestial orientation, even if a mass of other facts did not point the same way. The second is to be found in the presence of small variations corresponding to the differing positions of sunrise and sunset. If a number of monuments in a given area be oriented with tolerable accuracy on a comparatively small terrestrial object, say a mountain 100 miles away, they will lie approximately along the rays of a pencil, whose point is the centre of that object; hence all which are near together will be practically parallel to each other. But if their orientation have reference to sunrise, for example, *i.e.* to any one of the points in a line between the midsummer and mid-winter sunrises, they will lie along the rays of a pencil whose point is approximately the centre of the district under consideration; hence two neighbouring monuments which happen to have been put up at different times of the year may form a quite perceptible angle to one another. Therefore, in the case of peoples whose culture is sufficiently advanced for them to orient with fair accuracy on a point in the heavens, careful compass-bearings may help to determine, at least *a priori*, and as a basis for further investigations, whether their orientation is meant to be celestial or terrestrial. So the numerous small variations in the direction Anglo-Saxon pre-Christian interments, together with the south-north position of many, prove pretty conclusively to me that the graves are meant to face, not, *e.g.* the region of the continent from

¹ *Journ. Roy. Anthropol. Inst.*, xxiv, 1894-95, p. 349.

² *Ibid.*, xxxiii, 1903, p. 103.

³ *Ibid.*, xxxviii, 1909, p. 348.

⁴ *Ibid.*, xxxiii, 1903, p. 64.

which they came, but (generally) sunrise or (sometimes) Jötunheime.¹ Another test occasionally possible, but not always, owing to the small geographical range of many cultures, is to take evidence from all over a very large extent of territory and look for traces of convergence on one central point. So, while many features of the Bronze Age culture of France suggest a solar cult, which we have seen may conceivably lead to celestial orientation, and numerous bronze tombs of the Côte d'Or face east, one is obliged to take into account those Bronze IV interments of Bavaria which mostly face west,² and to ask whether they may not all be intended to face roughly towards the Rhine, which may well have been a river of souls as in the Bornese example.

V. UNORIENTED GRAVES.

It has been objected by a friendly critic that with the help of a little special pleading the numerous varieties of orientation which I have sketched will result in making every possible grave oriented in some way. That this is not without an element of truth, even for celestial orientation, is clear from the numerous highly ingenious theories which have connected various stone monuments with recondite astronomical facts. I therefore give in this section, firstly, certain cases of bodies which I believe to be oriented in spite of superficial appearances to the contrary, and, secondly, the main forms which unoriented burials seem to me to take.

(a) *Disguised Orientation.*

The mere fact that the body seems to have no fixed direction, or (as in the case of the ashes of a cremated body enclosed in a round jar) cannot be said to point in any direction at all, does not necessarily disprove orientation. In such cases, indeed in all, we should consider the direction in which the grave points. Thus, the ordinary Etruscan tomb is more or less square, having benches along the sides on which the bodies lie extended; they may, therefore, face in various directions in one and the same tomb. But if the door of the tomb can be held to point towards some conceivable goal for the journey of the spirit, or towards a path of spirits, that is surely reason enough for considering the possibility of some sort of orientation, with all that that implies. So with the cremation-burials at Wittenham, Berks, where the graves face east,³ and with the long barrows of Britain, the majority of which point west.⁴ If the dead man has to go on a journey, it is surely enough for any intelligent ghost that his door is pointed the right way; while if the sun-calendar theory is applicable, I have already shown that the position of the body counts for little.

¹ Cf., *Grimm*, DM⁴, vol. i, p. 120. The Teutonic dead go to Odin, hence the Christian curse, *far þu til Óðins*, i.e. "go to your nasty heathen god," viz., the devil. The directions for prayer are N. (p. 28), occasionally E. or W. (vol. iii, p. 22), the last perhaps accounting for the rare E.-W. orientation of some Saxon burials, *Crania Britannica*, ¶ 10, 1.

² Déchelette, *loc. cit.*, vol. ii, pp. 153, 157.

³ *Crania Britannica*, ¶ 47, 2.

⁴ Greenwell-Rolleston, p. 480.

(b) *Simple Non-Orientation.*

There are, however, cases in which neither the body nor the tomb can be said to point in any particular direction. Such are the round barrows of Great Britain, which have no door or other distinguishing mark to discriminate between one side and another, and in which, so far as I can find from an attentive study of Mortimer and Greenwell-Rolleston, the bodies have their faces turned in all imaginable directions, including straight downwards. The conclusion seems to me irresistible that the mixed population of these islands in the second millennium B.C., the beaker-men and their contemporaries and predecessors, did not orient at all.

Still there are cases in which the group of tombs reveals some sort of arrangement. Such are these Italian burial-places which are *templa*, laid out like towns with regular streets at right angles, and gates which face one or more of the cardinal points. Here it may be that we should regard the whole cemetery as one vast tomb, to which the considerations in (a) may apply. It is also conceivable that in some particular cases apparently aimless arrangements might, on further investigation, be seen to be complicated examples either of terrestrial orientation or of one of the forms still to be discussed.

(c) *The Funeral Banquet.*

About the twelfth and eleventh centuries B.C., according to Orsi, there lived in Sicily a race which bestowed its dead in a somewhat uncommon form of tomb. The structure was circular, having a vestibule but no true dromos, and the dead sat around the wall of it, arranged as at a banquet, with food-vessels and the like in the middle.¹ There was no orientation in any of the senses yet discussed; but we cannot say the arrangement was haphazard or meaningless, especially when we remember that, to confine ourselves to that same region, the Orphic faithful in later times looked forward in their less exalted moods to a blissful eternity of drunkenness. A not dissimilar arrangement is to be found in North America in one or two cases.² I notice in many of the round barrows what look like the reverse of this arrangement, many—I think the majority—of the bodies facing outwards. Whether this has any significance I do not know. Should it perhaps be connected with the habit of many of the non-European races of turning their backs upon each other as they eat? Certainly the occupants of these barrows seem to have been well supplied with offerings of food and drink.

(d) *The Wotjobaluk Arrangement.*

Whereas most tribes of Australia, such as the neighbouring Narrang-Ga, seem either not to orient at all, or to turn the face of the dead in the required direction,³ the Wotjobaluk lay the head towards that point of the compass which is connected

¹ Peet, *Stone and Bronze Ages*, p. 463.

² Bushnell, *op. cit.*, pp. 64, 76.

³ Howitt, p. 450.

with the dead man's totemic clan. Thus, Natya-ngal have their heads north, Wurti-ngai east, Ngungul south-east, and so on; the whole Krotish phratry are north, the Gamutch south, of the equatorial line. Thus if representatives of every clan were buried in a common cemetery, they would lie along the radii of one and the same circle, all looking towards the centre.¹ This singular arrangement has been acutely analyzed by MM. Durckheim and Mauss in *L'Année sociologique*.² They do not consider the Australian arrangement to be primitive, and hold that the Zuni evidence collected by Cushing takes us a step further back. There we find the whole world divided up among the six cardinal points (north, south, east, west, zenith, and nadir), to which in particular the various clans belong, *e.g.* bear, coyote, and spring-grass to the south. But there are further indications, not only that zenith and nadir are comparatively recent additions, but that the compass-bearing is no part of the original scheme, the fundamental thing being the beast which is the chief of each group and its intermediary with the Creator. The Omaha are divided, not into north and south, but into right and left; the four great divisions of the Ponka, corresponding to the four elements, have assigned to them each a quarter of the circular encampment, fixed not by relation to the heavens but in accordance with the position of the entrance; so that the water-clan, for instance, is generally in the south-west quarter, for the entrance is generally west, but essentially in the first quarter on the right of the entrance. In other words, the arrangement is "sociocentric." The camp, to which all else is referred, is in itself a holy thing, an *omphalos*, as Dr. Marett³ has aptly named it.

This appears to me to be the very opposite of orientation. In the latter, the essential thing to note is usually the direction in which the dead man is going, whether his goal be a permanent or a temporary abode. Here, on the contrary, we find that what chiefly matters is to what part of the universe, centring around the camp or other holy spot, he belongs. He is not apparently going anywhere, for he does not and cannot leave his clan, or his quarter of the heavens.

Such then are the provisional conclusions to which I have been able to come. As to the utility of my results, in so far as they may gain acceptance, I would point out that they may furnish a new test, perhaps more satisfactory than the now generally discredited one of cremation versus inhumation, for difference of race or culture; that theories of migration can to some extent be checked by them, the more so if we have further detailed regional studies like that of Mr. Perry; and, finally, that nothing can be wholly uninteresting which illustrates the various solutions offered from time to time to that ancient riddle, "If a man die, shall he live again?"

¹ Howitt, p. 453.

² Vol. vi, p. 1, ff.

³ In an unpublished lecture. For the importance of the central point, see Roscher, *Omphalos*.

THE "PACCHA" OF ANCIENT PERU.

By T. A. JOYCE.

[WITH PLATES X—XIII.]

IN the exhibition of Indigenous American Art, organized by the Burlington Fine Arts Club in 1920, were exhibited (Case L, Nos. 31 and 32) two remarkable wooden objects, ornamented with an inlay of mastic, which gave rise to considerable speculation as to their actual use. These had kindly been lent by the late Mr. James Guthrie Reid. In the autumn of the same year Mr. Louis Clarke sent me a note of a similar object in the Peabody Museum, Cambridge, Mass., of which, by the kindness of Mr. S. K. Lothrop, I was able later to obtain a photograph. The three are figured on Pl. X. Some months after, while engaged upon certain researches relating to quite another subject, I was so fortunate as to discover, quite by accident, not only the particular function, but also the name, of these utensils. I will first describe the individual specimens, and then proceed to a discussion of their use. Pl. X, Figs. 1 and 1A is carved from solid, hard, mahogany-like wood in the form of a plank, rectangular in section. At one end is the standing figure of a carnivore, supporting on its back a round bowl, the posterior margin of which has been broken at an early date and patched with a fragment of gourd, held in position by a resinous cement. In front of the animal's head is seated a human figure, with hands to mouth. A channel passes from the bowl through the heads of the animal and the man, so that any liquid poured in the bowl would issue from the man's mouth and fall between his outstretched legs. Thence it would flow through a deep double zigzag channel to the end of the utensil (which is imperfect, this end having evidently been cut off). The whole is ornamented with an inlay of coloured mastic—red, yellow, dark green, pale green, white, and black. On either side of the bowl is a butterfly (Fig. 1A); on the upper surface of the channelled portion are a catfish, a lizard, and conventional insects (Fig. 1c); while on each side are conventional designs, enclosed in squares, and staves with star-heads, alternating (Fig. 1b). The carnivore's eyes are indicated by mastic inlay, but those of the man consist of small pierced discs of turquoise. (Length, 20½ inches.)

The other specimen (Pl. X, Figs. 2 and 2A) is similar in pattern, though the bowl and supporters are lacking. The presence of a square hole at one end would seem to indicate that the bowl portion was, in this case, separate from the rest of the utensil, and affixed to it as occasion might demand. The liquid from the bowl

would fall into a square reservoir, whence it would pass, again by a double zigzag channel, to the other end of the object, which is furnished with a pierced spout in the form of a jaguar's head. This specimen is also ornamented with an inlay

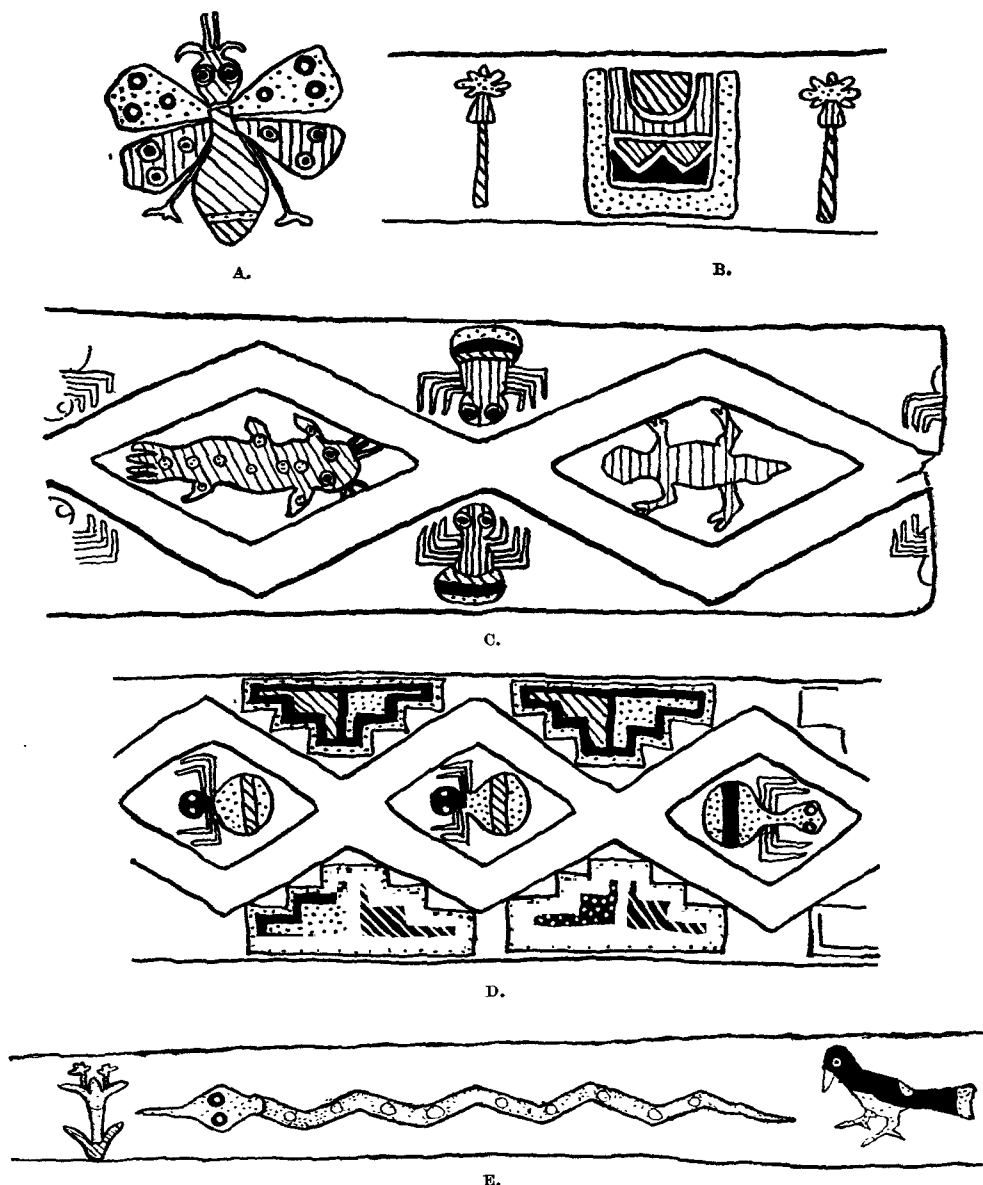


FIG. 1.

of mastic in green, two yellows, white and black. On the upper surface of the channelled portion, along the edges, each angle of the zigzag contains a step-design, while each of the lozenge-shaped knobs shows an insect similar to those of the other specimen (Fig. 1D). On each side is a bird, two snakes, and a flower (Fig. 1E),

and the jaguar's head is ornamented with black spots on a yellow ground. (Length, 25 $\frac{1}{4}$ inches.)

Of similar type is the Peabody Museum specimen (Pl. X, Fig. 3), but this is perfect. In front of the bowl is a human torso, prone, with outstretched arms. The liquid in the bowl would fall from his mouth into a square reservoir, and, after passing through double zigzag channels, would finally issue from a plain conical spout at the extreme end. A short handle projects from the base of the bowl. Mr. Lothrop kindly sent me drawings of the mastic ornament, which is in two reds, green, yellow (?), white and black. The bowl has two scenes in panels, each once repeated. One shows a person seated on a stool and carrying a spear under a horseshoe-shaped “canopy,” which terminates in puma heads (Fig. 2, 3). On either side of him stands a figure armed with a bow and quiver full of arrows. The other scene is a conventional tree, with a monkey and a bird on each side (Fig. 2, 1). The sides of the channelled portion show a flower and a humming-bird repeated alternately (Fig. 2, 2). (Length, 26 $\frac{1}{2}$ inches.)

During a visit to Madrid, my colleague, Mr. H. J. Braunholtz, found in the Museum yet another specimen of this utensil, and my friend, Mr. Louis C. G. Clarke, a week or two later wrote to me that he had discovered two examples there. By the kindness of Mr. S. K. Lothrop, who obtained me photographs, I am enabled to figure these (Pl. XI, Figs. 1 and 2). Of them, Fig. 2 shows a similar “plank,” supporting a bowl, and carved with a single zigzag channel with which the bowl communicates by means of a hole. It is unornamented, and carries no indication of date. (Length, 21 $\frac{1}{2}$ inches.)

Fig. 1, is extremely interesting; the bowl is in the form of a carnivore, and is studded with iron nails. The contents of the bowl do not issue from the animal's mouth, but pass by way of an aperture at the bottom of the bowl, through a straight concealed channel, which pierces the length of the “plank.” At the same time, the double zigzag conduit, characteristic of the first specimens described, is indicated, in the form of an ornamental survival, in mastic inlay on the upper surface. Along the sides are series of figures, also in mastic inlay, wearing plumed hats and carrying firearms. Both the style of the ornament and the presence of the iron nails are sure proof that the specimen belongs to post-Conquest times. (Length, 19 $\frac{1}{2}$ inches.)

The explanation of the use of these peculiar utensils is to be found in Frézier's account of the voyage which he made in 1712–14.¹ In a description of an Indian feast which he witnessed at Talcahuano, he writes as follows :—

“ Les femmes leur donnoient à boire de la *Chicha*, espece de biere, dont nous parlerons ci-après, avec un instrument de bois long d'environ deus pieds $\frac{1}{2}$ composé d'une taffe à manche d'une côté & d'un long bec de l'autre, creufe d'un petit canal fait en serpentant, afin que la liqueur coule doucement dans la bouche par un petit

¹ *Rélation du Voyage de la Mer du Sâd*, par M. Frézier. Paris, 1732.

trou percé au fond de la taffe à la tête de ce canal; avec cet instrument ils s'enyvrent comme des Bêtes en chantant, sans interruption, & tous ensemble."

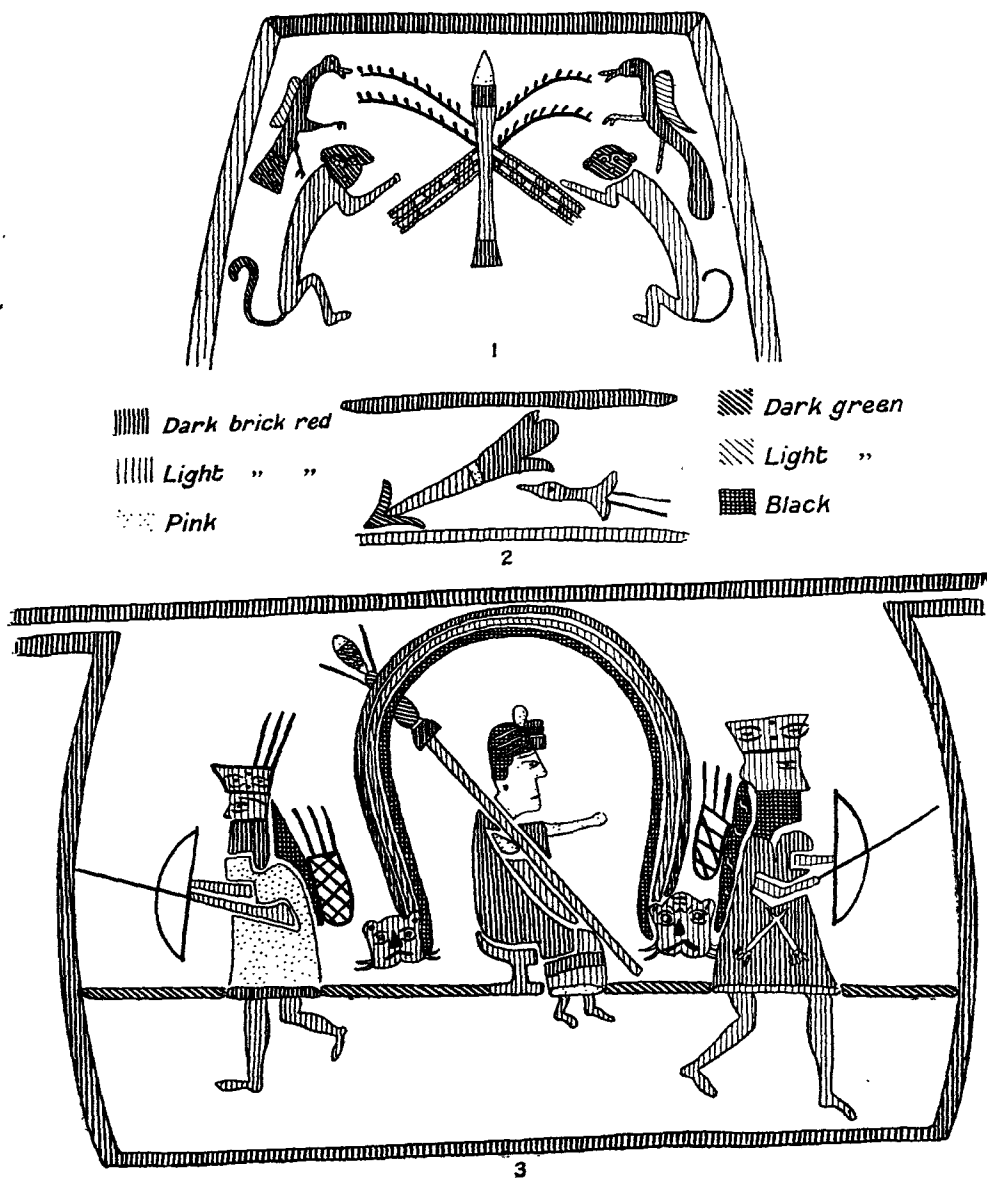


FIG. 2.

Frézier supplements his description by an illustration of the utensil, appearing at the foot of his Pl. IX, reproduced herewith (Pl. XII). From the letterpress accompanying the plate we derive the further information that it was called

*Paquecha*¹, and, though the example figured exhibits a single zigzag channel instead of a double, I do not think that there can be any reasonable doubt that Frézier's *Paccha* and the specimens which I have described above are one and the same thing.²

It may seem strange that the explanation of these peculiar objects, which are proved by their mastic ornamentation to belong definitely to the Inca culture, should have been reported from a region just outside the Inca sphere of control; and it must be admitted that the details embodied in Frézier's account show clearly that the feast which he describes was conducted on “Araucanian” lines. But two points should be remembered: first, that the Inca made more than one expedition south of the river Maule, and that, though they exercised no effective control south of the river, the small groups of settled agricultural communities had not remained uninfluenced by their culture; second, that Frézier's account is some 180 years later than the conquest of Peru, and that the transport, in numbers, of the more docile Peruvians as slaves, to assist in the exploitation of the country of the rather intractable Araucanians, cannot have failed to influence the local ethnography. The very word *Paquecha* I believe to be Kechua, the speech of the Inca people and the *lingua franca* of their empire. Tschudi, in his Kechua dictionary, gives a word *paccha*, with the following meaning: “(1) Subst. das Bächlein, die Quelle; *arroyo, chorro de agua, fuente*. (2) Verb, fließen (vom Wasser), tropfen; *correr el agua, gotear*.”

I think it is quite clear that the practice observed by Frézier in Chile was a survival of a Peruvian custom of the Inca period.

Next, with regard to the date of the particular specimens which constitute the subject of this note, I can only summarize briefly here. I hope to deal in detail with the whole question of inlaid mastic ornament at some future date. For the moment all I will say is that, from the evidence which I have been able to collect, this class of ornamentation did not come into vogue until quite late Inca times. That is to say, fourteenth century or so. It is quite certain that this particular form of technique survived the Spanish conquest. Mr. Louis Clarke possesses a wooden beaker from Copacabana with the figure of a man playing a harp (strangely enough of oriental pattern),³ while the British Museum collection includes another showing a man in cloak and hat sitting in a vessel with a sail. I am inclined to refer the Peabody Museum *Paccha* to the post-Spanish period from the fact that the human figure appears to be wearing a hat. As regards two other specimens

¹ It must be remembered that Frézier was a Frenchman, writing in French, and that the spelling *Paquecha*, according to French phonetics, corresponds exactly to the word *Paccha* (with a “faucal gasp” between the c's) which is recorded in Middendorf's dictionary quoted below.

² Frézier's illustration bears such a remarkable resemblance to the Madrid specimen figured on Pl. XI, 2 that one almost wonders whether they are not one and the same.

³ This form of harp was evidently common in Peru in post-Conquest times; see Wiener, *Pérou et Bolivie*, Paris, 1880, p. 187.

figured on Pl. X, I will merely observe that the butterfly design relates the specimen on Pl. X, Fig. 1 and 1A, with certain pottery discovered on the islands in Lake Titicaca, while the particular form of flower, illustrated in Fig. 1E (text) and the Peabody specimen, is characteristic of late Inca art. Of the Madrid specimens, Pl. XI, Fig. 1, is, to judge by the ornament, obviously post-Conquest; the date of the other, Pl. XI, Fig. 2, is uncertain.

To recapitulate, Frézier's experience related to Talcahuano—that is to say, a locality within the "Araucanian" region, and south of the river Maule, which formed the southern boundary of the Inca Empire: but we know that the Inca made many excursions south of the river, and that their cultural influence extended beyond the range of the effective political control exerted by them. At the same time we know also that long and extended drinking-bouts were a characteristic of the Araucanian-speaking nomads. The *Paccha* which I have figured belong to the late Inca period—that is to say, to the period after the Inca had come into close contact with the Araucanians, and that fact might very well give rise to the question whether it were not more reasonable to suppose that the *Paccha* was originally an Araucanian utensil, the use of which had been adopted by the Inca.

With regard to this point, I have shown above that the name of the utensil almost certainly comes from the Kechua language. Secondly, we know that, at certain of the religious festivals in Peru,¹ enormous quantities of *chicha* were consumed. Moreover, I think that there is evidence to show that this method of serving drink was very widespread in Peru in Inca times.

On Pl. XI, Fig. 4, is shown a pottery vase, moulded in the black ware, characteristic of the Truxillo region, which was manufactured there before the Inca conquest of the coast, but which prevailed until the coming of the Spaniards (and even later). It represents a bowl supported upon the pod of some leguminous plant, at the end of which is a small hole. It is in fact a *Paccha* translated into clay, the "plank" portion being moulded in vegetable form. (Madrid. Length, 16½ inches.)

Pl. XI, Fig. 3, is even more interesting. Here we have a bowl in the form of a llama's head, supported upon a tapering "plank," the whole moulded from clay and ornamented with red and black slip. The ornament supplies the principal feature of interest, since the upper surface of the "plank" bears a design which can only be interpreted as a degenerate survival of the double zigzag channel which is the predominant feature of the specimens figured on Pl. X. We have, thus, a complete series: the wooden "plank," grooved with its double zigzag channel; the wooden plank pierced by a straight conduit, but preserving in the ornament of its upper surface the original double meander; and the pottery form, in which the ornament of the upper surface has so degenerated that, without the explanation

¹ Such as Intip-Raymi. See my *South American Archaeology*. London, 1912; pp. 165 and 166.

provided by the other specimens, the pattern might well be regarded as merely formal and without significance. (Madrid. Length, $6\frac{1}{2}$ inches.)

Pl. XIII, Fig. 1, illustrates a specimen similar to the last, but in the black ware of the Chimu period (like Pl. XI, Fig. 4). This is not furnished with any slip decoration, and consequently the last exterior indication of the channel has disappeared, though the form is still maintained. (British Museum. Length, $8\frac{5}{8}$ inches.)

In Pl. XIII, Fig. 2, a departure from the typical form becomes evident. This vase apparently represents a man clinging to a *balsa* (reed raft); but there are still two apertures. Any liquid poured in at the "mouth" of the vase, situated between the man's feet, would naturally issue from the small hole at the pointed end of the conventional *balsa*. This vase is moulded in the same black ware of the Chimu period as the specimen immediately preceding. (British Museum. Length, $11\frac{1}{4}$ inches.)

Having regard to the fertile imagination of the coastal population of northern Peru in design, it might naturally be expected that, once a departure had been made from the original form of the *Paccha*, a great variety of patterns might be produced; and I would suggest that many pottery vases, furnished with two apertures, may have served the same purpose.

Pl. XIII, Fig. 3, shows a vase of very remarkable pattern. Moulded from a reddish clay, and ornamented with geometrical patterns, it belongs to that class of object known as a "skeuomorph." Morphologically it may be divided into three elements: (1) a vase of the "aryballus" type, a type which is a constant element of Inca culture, supported on (2) an indeterminate hooked object, which is lashed to (3) a conical stem, which, to judge from the maize-cob projecting from its upper end (and incidentally forming an additional support to the "aryballus"), probably represents a maize-stalk. At the lower end of this stalk is a hole, through which any liquid poured in *via* the mouth of the "aryballus," would eventually issue. At the same time, if the "aryballus" is carried by the neck, and the thumb inserted in its mouth, the flow is stopped until the thumb is withdrawn. The axis of the "stalk," which runs diagonally to the vertical axis of the "aryballus," gives the right direction to the liquid if it is to be served to another person seated at a lower level. I would suggest that this is another form of *Paccha*. Unfortunately there is no information regarding this vessel, which is in the British Museum, to show from which part of Peru it came. The potting is that of the highlands, but the fantastic form belongs to the Truxillo area of the coast. It was probably made in the highlands by one of the coastal *mitimaes* deported thither after the conquest of the coast by the Inca at the end of the fourteenth century. (Length, $16\frac{1}{4}$ inches.)

Pl. XI, Fig. 6, shows a vase which is similar in essentials. Equally a skeuomorph, it represents an Inca "aryballus" resting in the mouth of another vase which, from the horizontal loop-handle, may be regarded also as a typical Inca form. At the base of the vessel is a spout, in the form of an animal's head,

from which would flow any liquid poured in through the mouth of the upper portion, unless closed by a stopper or by the thumb of the person carrying it. This vase, however, is moulded in the typical black ware of the Chimú period and was, therefore, almost certainly made in the Truxillo region after the conquest of the coast by the Inca. (British Museum. Length, 10 inches.)

In both these examples, the close connection with Inca culture is shown by the form of the vessel, but Pl. XI, Fig. 5, illustrates a pot of which the shape is characteristic of the northern coast. It is moulded from grey-buff clay, painted in brown slip, and represents a spiral shell. Though furnished with a lateral "flaring" mouth, it is provided, at the end of the spiral, with a small aperture through which the contents would flow in a manner recalling the other two specimens. The vase is undocumented, but the class of ware is late, and persisted into Inca times, especially in the region of Chancay. (British Museum. Length, $8\frac{7}{8}$ inches.) If, then, vases of this type served the same purpose as the wooden *Paccha* described above, there is every reason to attribute them to late Inca influence.

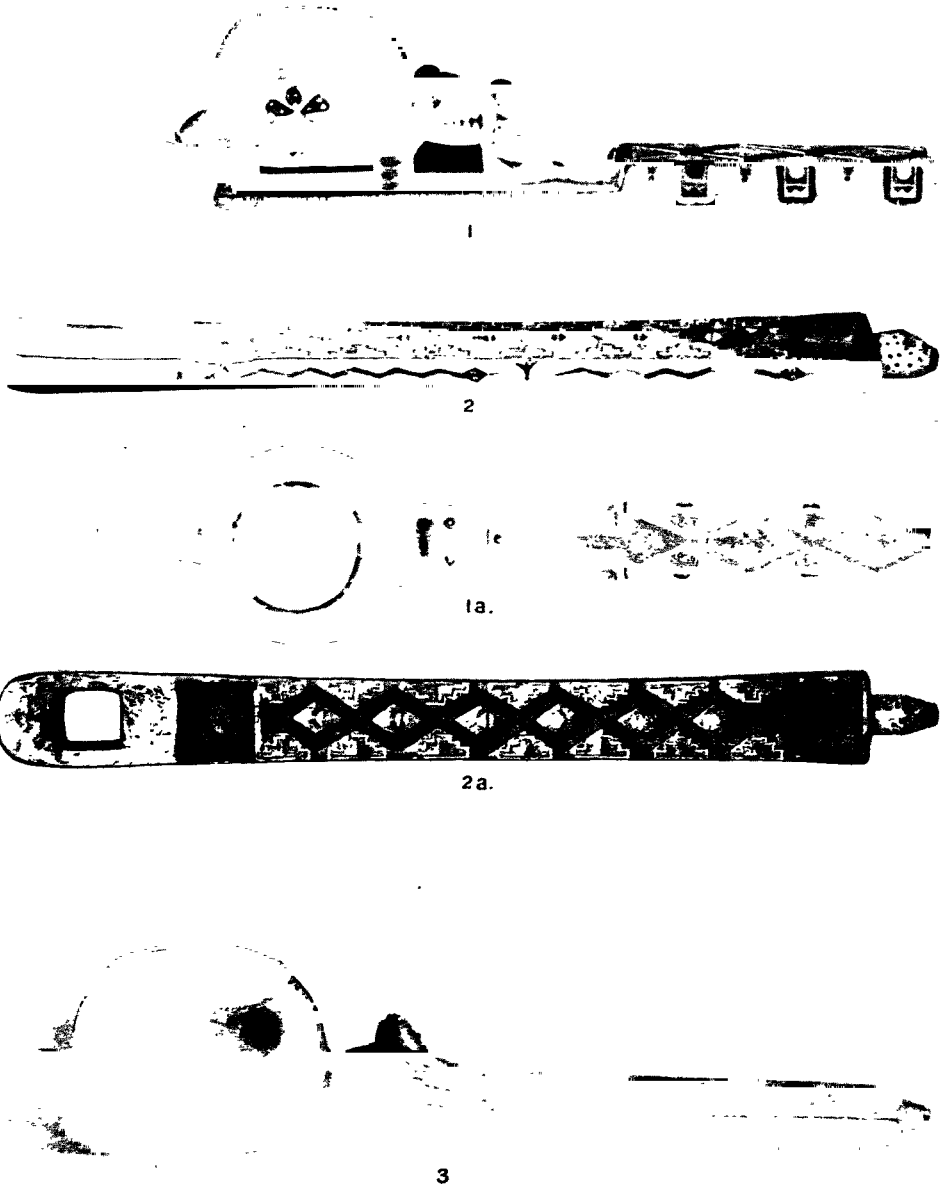
In this connection I would make, though very tentatively, another suggestion. The following quotation is taken from my *South American Archaeology*, p. 146 :—

"In many parts of Peru, especially in the neighbourhood of Cuzco, occur out-cropping rocks which have been carved with stairways, seats, and all manner of intricate channels leading from small reservoirs. Usually some sort of grotto or deep niche has been cut in the lower portion of these rocks, and human remains have been found in them. Uhle has suggested that these were the burial-places of important individuals, and that these small basins or reservoirs were intended for the reception of libations, which were supposed to reach the dead by means of the channels leading from them. . . . The same authority also suggests that the seat-like carvings, almost invariably called 'Seats of the Inca' . . . were also connected with a festival to the Sun, at which the mummies were brought out from their sepulchres and shared passively in the ceremonies."

The suggestion which I make now is that the meandering and zigzag channels in the rocks, mentioned above, are really permanent *Paccha* consecrated to the use of the dead who were deposited in the neighbourhood.¹ The sculptured rocks in the environs of Cuzco are uncertain in date, but I think the assumption that they are of early Inca, or even pre-Inca, period is not unreasonable.

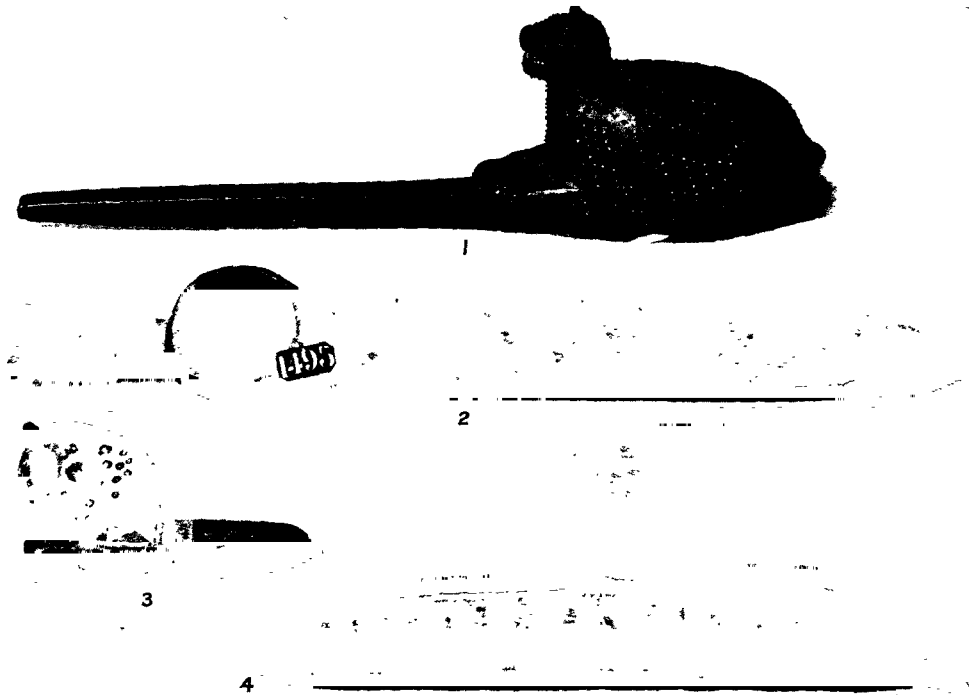
There can be no doubt that the utensils which I have illustrated on Pls. X and XI are identical with the *Paccha* observed by Frézier in Chile in the second decade of the eighteenth century. There is no doubt that they belong to the late Inca period, i.e. fifteenth century at latest. If I am correct in the suggestion that the pottery vases, figured on Pls. XI and XIII, performed a similar function, then it is clear that the use of some such utensil was so common in the Inca region

¹ In this connection I would refer to the Madrid specimen which, according to the label, was used for serving *Chicha* to the dead.



FIGS. 1, 1a, 2, 2a.—WOODEN "PACCHA."

FIG. 3.—WOODEN "PACCHA," PEABODY MUSEUM.



FIGS. 1 AND 2.—WOODEN "PACCHA," MADRID MUSEUM.
 FIG. 3.—POTTERY "PACCHA," COAST AREA, MADRID MUSEUM.
 FIG. 4.—POTTERY "PACCHA," CHIMU PERIOD, MADRID MUSEUM.

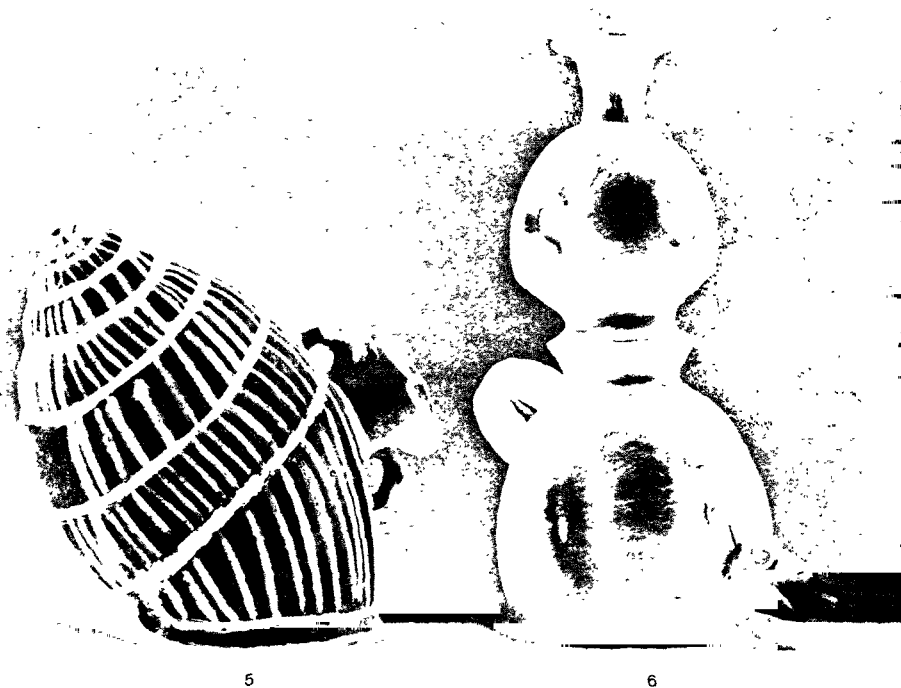


FIG. 5.—POTTERY (?) "PACCHA," COAST AREA, BRITISH MUSEUM.
 FIG. 6.—POTTERY (?) "PACCHA," POST-INCA CHIMU PERIOD, BRITISH MUSEUM.

THE "PACCHA" OF ANCIENT PERU.



THE "PACCHA" OF ANCIENT PERU.

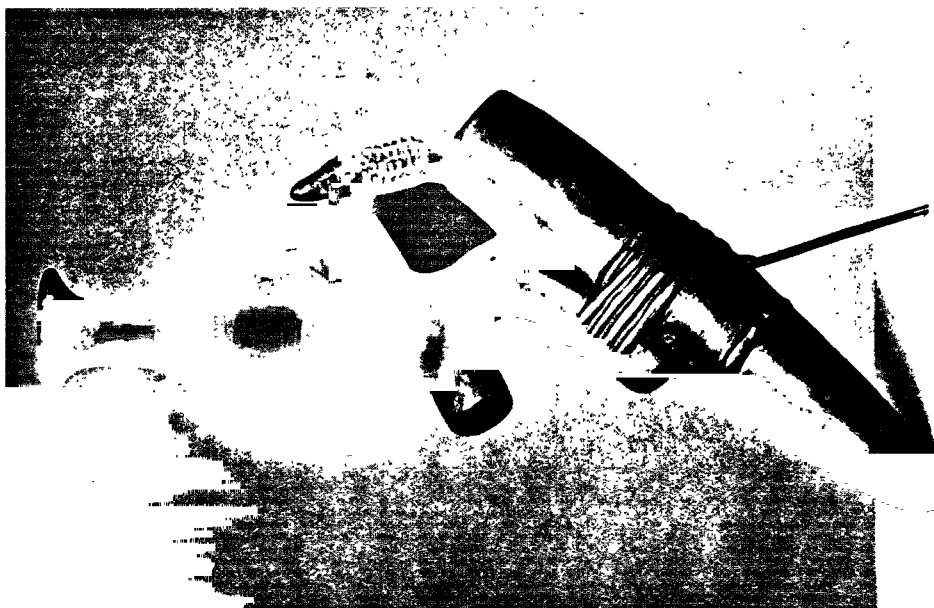


FIG. 3.—POTTERY (?) "PACCHA," POST-INCA CHIMU PERIOD, BRITISH MUSEUM.

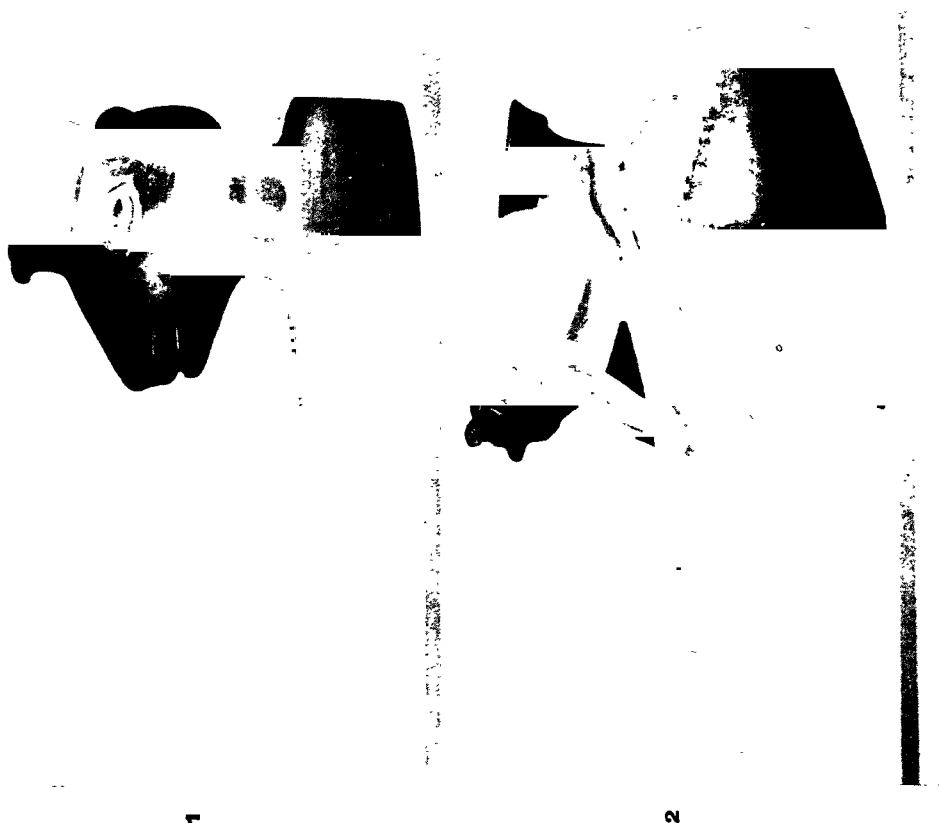


FIG. 1.—POTTERY "PACCHA," CHIMU PERIOD, BRITISH MUSEUM.

FIG. 2.—POTTERY (?) "PACCHA," CHIMU PERIOD, BRITISH MUSEUM.

at the time of the conquest of the coast (*circa* 1400) that it was transferred to the latter area as a natural consequence of the Inca conquest. At the same time, if I am right in the guess that the zigzag channels in the outcropping rocks near Cuzco are related to the practice of ceremonial libations, then the principle of the *Paccha* belongs to a date considerably earlier, and is closely connected with the culture of the Peruvian highlands.

I have wandered, I admit, into the region of conjecture. The object of this note is the explanation of the use of a utensil so rare in collections that, when, in response to an appeal from the Burlington Fine Arts Club, two specimens were contributed to its exhibition of indigenous American art, their meaning baffled all the experts. That meaning, I think, finds its explanation in the passage and illustration reproduced above from Frézier.

L'ŒUVRE ANTHROPOLOGIQUE DU PRINCE ALBERT I^{ER} DE
MONACO ET LES RÉCENTS PROGRÈS DE LA PALÉONTOLOGIE
HUMAINE EN FRANCE.

The Huxley Memorial Lecture for 1922.

By MARCELLIN BOULE, Professeur au Muséum national d'Histoire naturelle,
Directeur de l'Institut de Paléontologie humaine.

MES premières paroles doivent être pour vous remercier et pour m'excuser.

Merci d'abord de m'avoir invité à prendre la parole dans cette fête annuelle de votre Société. Il me suffit de parcourir la liste des Savants qui m'ont précédé ici en pareille circonstance pour que je ressente vivement l'honneur que vous avez voulu me faire. Ma reconnaissance a d'ailleurs des sources plus profondes et surtout plus lointaines car, de tout temps, j'ai apprécié la Science anglaise à sa haute valeur.

Il y a plus de quarante ans, vos grands Maîtres étaient déjà les miens. Jeune étudiant, j'apprenais la Géologie dans les écrits de votre illustre Lyell et la Pré-histoire dans les livres célèbres de Lubbock et de John Evans, tandis que je puisais mes premières connaissances d'Anatomie comparée dans les précieux *Eléments* d'Huxley. J'avais et j'ai conservé pour ce dernier Savant une vive admiration. Jamais de plus éminentes qualités didactiques ne furent mises au service d'un esprit plus scientifique et plus pénétrant. Je me suis vraiment nourri des ouvrages d'Huxley et, aujourd'hui encore, de temps à autre, je les prends comme modèles pour tâcher de donner à mes cours du Muséum national le plus d'intérêt et de clarté possible. Il semble que ce soit par une sorte de phénomène télépathique que vous m'ayez convié à participer aujourd'hui à la commémoration de votre grand compatriote. Et de cela aussi je vous remercie bien cordialement.

Je vous dois encore des excuses. Quand, l'an dernier, Monsieur le Secrétaire Fallaize voulut bien m'informer de votre décision en des termes flatteurs, je n'hésitai pas à accepter de me rendre à Londres. Aujourd'hui une série de circonstances s'opposent malheureusement à la réalisation de ce projet. J'en suis désolé et je vous prie d'agréer mes plus sincères regrets. J'espère que des jours meilleurs me permettront de réparer cette défection bien involontaire et de faire la connaissance personnelle des Membres d'une Société à laquelle j'ai le plaisir d'appartenir depuis onze ans comme membre honoraire et dont j'admire, depuis plus longtemps encore, la belle activité scientifique. Pour le moment, mes chers Confrères, je me vois

réduit à consigner ici par écrit les choses que j'aurais eu tant de plaisir à vous dire de vive voix.

J'ai beaucoup hésité sur le choix du sujet à traiter devant vous. Je ne suis pas un anthropologiste dans le sens strict du mot. Mon bagage scientifique est fait surtout de Géologie et de Paléontologie. C'est par ces deux sciences que j'ai été conduit à m'occuper d'Anthropologie : puisque l'Homme est connu à l'état fossile, son histoire la plus ancienne relève nécessairement et directement de la Géologie et de la Paléontologie et ne relève vraiment que d'elles.

Ce sont vos illustres prédécesseurs, les Lyell, les Prestwich, les Falconer, les Huxley, les John Evans, qui, venus à la suite et pour ainsi dire, au secours de nos grands précurseurs, les Tournal, les Boucher de Perthes, les Noulet, les Lartet, ont placé la question de l'Homme fossile sur son véritable terrain ; ce sont leurs travaux qui ont jeté les premières clartés sur les grands problèmes de la Géologie et de la Paléontologie quaternaires. Les observations géologiques de Lyell et de Prestwich, les descriptions paléontologiques de Falconer et de M. Boyd Dawkins, les considérations anatomiques et philosophiques d'Huxley, les spéculations archéologiques de Lubbock et de John Evans n'ont encore presque rien perdu de leur valeur, bien que les jeunes générations aient de trop fortes tendances à les oublier.

J'aurais désiré mettre en lumière les causes profondes de cette belle floraison de savants britanniques attachés à résoudre, par les moyens les plus divers, le grand problème de nos origines, floraison dont l'épanouissement n'est pas près de finir, comme le prouvent les découvertes et travaux de toute sorte effectués par vous et chez vous dans ces derniers temps. Je pense que ces causes tiennent précisément, du moins en grande partie aux conditions géographiques et géologiques de votre territoire. Chez vous, en effet, se rencontrent et se pénètrent tous les régimes ailleurs isolés. Au point de vue géologique, vos terrains pliocènes et pléistocènes sont des plus variés ; vous avez des formations marines, des formations glaciaires, des formations alluviales, des dépôts d'atterrissement, des cavernes à ossements, des tourbières, etc. L'étude des rapports stratigraphiques de ces diverses formations vous a conduits de bonne heure à des résultats particulièrement intéressants et précis. Il est certain par exemple, que telles observations anciennes de Lyell et de Prestwich demeurent encore des observations capitales.

Au point de vue paléontologique, vous possédez, dans vos gisements pliocènes du Norfolk, dans les formations alluviales pléistocènes de vos grandes vallées, dans les dépôts de remplissage de vos cavernes, dans vos tourbières, etc., une succession à peu près ininterrompue de faunes fossiles dont l'étude, conjointement à l'étude stratigraphique, est de nature à faciliter singulièrement la solution des problèmes chronologiques.

Au point de vue archéologique, votre situation est un peu spéciale, mais il se trouve qu'à diverses époques, le rattachement au continent de votre pays a permis l'accès de celui-ci aux plus vieilles populations de l'Europe occidentale, de sorte

que vous ne manquez pas de documents sur l'ethnographie de ces anciens Hommes et que vous pouvez aussi bien, sinon mieux qu'ailleurs, établir les rapports les plus instructifs entre toutes les données de la Géologie, de la Paléontologie et de l'Archéologie préhistorique.

Un tel sujet avait donc bien des attraits pour moi ; mais, pour le traiter convenablement devant vous, j'aurais dû consacrer à sa préparation beaucoup plus de temps que celui dont mes occupations professionnelles m'ont permis de disposer. J'hésitais encore lorsqu'est survenu un événement douloureux, la mort du Prince Albert Ier de Monaco, dont le nom restera, vous le savez, comme celui d'un des plus grands bienfaiteurs de la Science et dont je m'honore d'avoir été un des plus fidèles collaborateurs. Tout le monde sait aujourd'hui les services que ce Prince a rendus à l'Océanographie. Moins bien connus, quoique non moins grands, sont les services qu'il a rendus à la Paléontologie humaine. Il m'a semblé que je pourrais vous intéresser en vous parlant d'un illustre et regretté bienfaiteur de l'Anthropologie et que je remplirais un devoir en rendant à sa mémoire, devant un auditoire d'élite, l'hommage qui lui est dû. L'œuvre anthropologique accomplie par le Prince ou par ses collaborateurs est telle, que, en l'exposant, je pourrai, du même coup, vous indiquer les principaux progrès accomplis récemment en France dans le domaine de la Paléontologie humaine.

Ce que je désire surtout vous montrer c'est que l'intervention du Prince de Monaco ne fut pas celle d'un simple amateur ou même d'un simple Mécène. Il a apporté à l'étude du grand problème des origines humaines l'ardeur et surtout l'esprit de suite qu'il a déployés dans les recherches océanographiques pour aborder le problème plus général de l'origine de la vie. Dans l'un et l'autre cas, il a grandement payé non seulement de sa bourse mais aussi de sa personne.

* * * * *

Tous les touristes qui ont visité la Côte d'Azur vers la frontière franco-italienne, connaissent les Baoussé-Roussé, ou Rochers rouges, dont les escarpements, terminant de ce côté la chaîne des Alpes, tombent à pic dans la mer, non loin de Menton, mais en territoire italien, sous l'antique village de Grimaldi, autrefois la propriété des Princes de Monaco.

Ces rochers superbes, aux colorations chaudes, toujours inondés d'une vive lumière, sont creusés de grottes qui s'ouvrent largement sur la mer céruléenne, dans un paysage enchanteur. Ces grottes sont depuis longtemps célèbres par les découvertes qui y ont été faites à diverses époques. Il semble que ce soit un Prince de Monaco, Florestan Ier, grand-père d'Albert Ier, qui ait le premier compris leur intérêt scientifique. A une date antérieure à 1848, il avait envoyé à Paris une caisse de débris divers recueillis dans ces grottes. J'ignore ce qu'on fit à Paris de ces ossements et silex taillés, mais étant donnée la date de leur envoi, dix ans avant

le triomphe de Boucher de Perthes, tout porte à croire qu'ils ne furent pas appréciés à leur juste valeur par les savants auxquels ils furent probablement montrés.

Les cavernes de Menton ne tardèrent pas à être connues et à recevoir la visite de divers naturalistes ou archéologues.

On y avait déjà pratiqué quelques fouilles, d'ailleurs superficielles, lorsqu'en 1870, un médecin français, Emile Rivière, que sa santé obligeait à séjourner sur la Côte d'Azur, entreprit d'explorer les "cavernes de Menton." Ses recherches ne tardèrent pas à être couronnées de succès. En 1872, il recontra un squelette humain dans la grotte dite du Cavillon, au-dessous d'un placage de stalagmite. C'est le fameux "Homme de Menton," aujourd'hui exposé dans la galerie d'Anthropologie du Muséum à Paris. L'année suivante il exhuma, d'une caverne voisine, les restes de trois autres squelettes. En 1874 et 1875, il retira deux squelettes d'enfants d'une autre grotte appelée depuis pour cette raison : Grotte des Enfants.

Ces découvertes eurent un grand retentissement. Elles se présentaient dans des conditions qui rappelaient celles du gisement de Cro-Magnon, exploré quelques années plus tôt dans le département de la Dordogne par Louis Lartet. Elles furent également discutées. Pour Rivière comme pour Louis Lartet, il s'agissait de sépultures d'âge paléolithique, c'est-à-dire pléistocène. Mais cette haute antiquité fut méconnue par la plupart des anthropologistes qui ne pouvaient se résigner à faire remonter si loin dans le passé le type de *Homo sapiens*. Le plus redoutable de ces adversaires était Gabriel de Mortillet, qui a rendu de très grands services à l'Archéologie préhistorique mais qui a souvent entravé les progrès de cette science par ses idées préconçues et ses préoccupations anti-religieuses. Il faut bien le dire, Rivière, dont nous déplorons la mort récente, n'avait ni la préparation scientifique, ni le talent voulus pour faire triompher sa cause bien que celle-ci fût juste. On lui reprocha de n'avoir pas apporté à ses fouilles une méthode et un soin suffisants, de n'avoir pas su établir la stratigraphie de ses gisements, d'avoir mélangé les niveaux en se fiant aux assertions de ses ouvriers. Le gros ouvrage qu'il publia en 1887, sur *L'antiquité de l'Homme dans les Alpes Maritimes*, mal ordonné, peu précis sur les points importants, fut une réponse insuffisante à ces critiques et l'opinion de G. de Mortillet, sur l'âge néolithique de tous ces squelettes, devint l'opinion générale accompagnée d'ailleurs, dans certains esprits, d'un doute pénible.

Alors intervint le Prince de Monaco, dont la noble curiosité scientifique s'exerçait depuis longtemps dans le domaine de l'Anthropologie comme dans beaucoup d'autres directions. Dès sa jeunesse, en effet, il avait prévu sa nouvelle tâche et s'y était préparé dans les laboratoires parisiens, s'entretenant de Paléontologie avec Albert Gaudry, étudiant l'Archéologie préhistorique avec G. de Mortillet, travaillant avec Manouvrier sur des squelettes humains. En 1882 et 1883—il n'était alors que Prince héréditaire—nous le voyons occupé à explorer une des plus

belles grottes des Baoussé-Roussé, la *Barma Grande*, travaillant lui-même de ses mains et tenant scrupuleusement sur un carnet son journal de fouilles. “ L’entreprise du Prince de Monaco, nous dit M. de Villeneuve, offre cette caractéristique particulière qu’elle vise moins la formation d’une collection d’objets préhistoriques que l’acquisition sur le terrain des connaissances auxquelles se lie dans son esprit la recherche des procédés propres à rendre tous les produits d’une fouille utilisables pour la Science.”

Obligé de s’absenter, il charge son archiviste, M. Saige, de poursuivre les recherches et il lui donne des instructions précises : “ Personne ne devra travailler aux fouilles en dehors de votre présence. . . Il est essentiel d’établir le plus exactement possible les niveaux auxquels les différentes pièces ont été trouvées par rapport à la surface absolue du sol, et surtout d’établir le rapport de ces différents niveaux entre eux. Il faut aussi noter l’épaisseur et la situation des couches stériles, c’est-à-dire qui ne fournissent rien, car elles indiquent une période pendant laquelle la grotte a été abandonnée. . . Un journal ainsi très soigneusement tenu devra, quand toute la caverne aura été fouillée, composer son histoire.” Et il indique la manière de travailler en établissant d’abord une tranchée de reconnaissance, en procédant ensuite par tranches horizontales, en tamisant les terres, etc. Il n’hésite pas à entrer dans les détails techniques les plus minutieux.¹ Ce ne sont pas là, on le voit, les faits et gestes d’un simple amateur, mais ceux d’un véritable homme de Science.

Des difficultés de diverses ordres s’étant élevées, le Prince écrivait de Paris, le 15 juin 1883 : “ Je vois, d’après les complications qui viennent continuellement à la traverse de nos fouilles, qu’il faut abandonner, pour le moment, les cavernes.” Mais ce n’était que partie remise. De plus en plus désireux de préparer la solution des importants problèmes d’Anthropologie préhistorique qui se posaient aux Baoussé-Roussé, le Prince ordonne en 1895, de reprendre les travaux d’exploration systématique, d’abord dans une caverne encore à peu près intacte, la “ Grotte du Prince,” ensuite dans des anfractuosités voisines déjà superficiellement fouillées mais dont les dépôts de remplissage étaient encore en partie en place.

Ces nouvelles fouilles ont duré près de dix ans. Elles ont été conduites par M. le Chanoine de Villeneuve et son aide M. Lorenzi avec un dévouement, une méthode, une habileté dont mes nombreux et longs séjours à Monaco, où m’avait appelé la confiance du Prince, me permettent de témoigner. Elles ont fourni de précieux résultats scientifiques consignés dans un grand ouvrage édité avec luxe par les soins du Prince.² Je dois retenir un moment votre bienveillante attention sur les plus importants de ces résultats.

¹ Voir L. de Villeneuve, *Les Grottes de Grimaldi, Historique et Description*, p. 31.

² L. de Villeneuve, M. Boule, R. Verneau, E. Cartailhac, *Les Grottes de Grimaldi*, 2 vol. in-4°, Monaco, 1906-1919.

La Grotte du Prince est la plus vaste du groupe. Les travaux d'exploration ont enlevé plus de 4,000 mètres cubes de matériaux de remplissage et ont permis d'étudier deux sortes de dépôts :—

- (1°) Les plus inférieurs, c'est-à-dire les plus anciens, représentent une vieille plage marine avec coquilles méditerranéennes et sans espèces boréales ; quelques formes sénégalienues, comme le *Strombus bubonius*, indiquent au contraire des eaux plus chaudes que les eaux actuelles.
- (2°) Au-dessus de cette formation marine se superposent, sur plus de 15 mètres d'épaisseur, des formations d'origine subaérienne traversées par des *foyers*, ou amas de cendres, particulièrement riches en ossements d'animaux et correspondant à des périodes successives d'occupation humaine. On y distingue deux groupes de foyers. Un groupe inférieur est caractérisé par des Mammifères de la période la plus ancienne des temps quaternaires et dénotant un climat chaud, tels que l'Hippopotame. Le groupe supérieur renferme les ossements d'espèces froides telles que le Renne.¹ La superposition de ces deux faunes, l'une chaude, l'autre froide, n'avait pas encore été constatée dans une contrée si méridionale. L'étude stratigraphique et paléontologique de la Grotte du Prince nous a appris que cette succession doit être admise pour la Côte d'Azur comme pour les Pyrénées, les bords de la Seine ou ceux de la Tamise.

Mais voici une constatation encore plus inattendue. Ce n'est pas l'industrie dite chelléenne que l'on trouve dans les niveaux inférieurs à faune chaude, à faune du Pléistocène inférieur, mais plutôt l'industrie moustérienne, ordinairement associée en Europe à la faune du Mammouth. Le fait a surpris, je dirai presque scandalisé, les archéologues préhistoriens trop portés à croire à la stabilité et à l'infailibilité chronologiques des divers types d'instruments paléolithiques. Ils l'ont vivement discuté et diversement interprété. Des deux méthodes en conflit, la méthode géologique et la méthode archéologique, je crois fermement que la seconde doit céder ici le pas à la première. Les faits d'ordre géologique et paléontologique ont une signification et une portée plus générales que les faits ethnographiques parce qu'ils ne dépendent pas, comme ces derniers, de l'action humaine. Je peux d'ailleurs vous annoncer la découverte toute récente, par M. de Villeneuve d'une industrie chelléenne grossière, dans la grotte de "l'Observatoire," sise à Monaco même, et à un niveau stratigraphique situé plutôt au-dessus qu'au-dessous du niveau à faune chaude et industrie moustérienne de la Grotte du Prince. Il n'est donc pas douteux que dès le Pléistocène inférieur, il y a eu des facies archéologiques différents suivant

¹ Le Renne n'est pas la seule espèce "froide" que j'aie observée pour la première fois dans cette région. Parmi les ossements provenant de fouilles effectuées récemment par M. de Villeneuve dans une grotte de Monaco, j'ai eu le plaisir de reconnaître un crâne d'Isatis (Renard bleu).

les régions habitées par des Hommes qui pouvaient être eux-mêmes différents les uns des autres.

La grotte du Prince nous a appris bien d'autres choses. Le fait exceptionnel de l'existence, sur le même point et en contact, d'une faune marine et d'une faune de Mammifères pléistocènes a jeté une vive lueur sur la chronologie des changements survenus pendant les temps quaternaires dans le niveau de la mer et dans la configuration des rivages méditerranéens. J'ai essayé d'établir les rapports de ces variations avec les phénomènes glaciaires et les phénomènes de creusement et d'alluvionnement des vallées et, à la lumière de tous ces faits, d'expliquer les échanges de faunes entre l'Afrique et l'Europe. En outre, le bel état de conservation des innombrables documents paléontologiques recueillis dans cet ossuaire m'a permis d'apporter des données nouvelles à l'histoire et à la distribution géographique des Mammifères pléistocènes.

Mais la grotte du Prince ne livra pas le moindre débris humain et ce fut une déception car on avait beaucoup compté sur l'intégrité des dépôts de ce beau gisement pour arriver à fixer, une fois pour toutes, l'âge des diverses sépultures trouvées dans les grottes voisines et sur lesquelles on discutait encore.

Le Prince décida alors de porter ses chantiers sur d'autres points. La Grotte des Enfants n'avait été qu'en partie fouillée. Il restait encore près de 8 mètres d'épaisseur de dépôts intacts. Ici les recherches eurent le plus grand succès au point de vue anthropologique : quatre squelettes humains furent découverts à trois niveaux différents. Les observations stratigraphiques et paléontologiques permirent de résoudre définitivement le problème de l'âge des squelettes humains anciennement et nouvellement découverts aux Baoussé-Roussé.

Le principal résultat de ces observations est que tous les squelettes sont bien pléistocènes. Ceux des niveaux supérieurs remontent au plus vieil âge du Renne. Mon savant collègue et ami M. Verneau, qui avait déjà publié d'intéressantes descriptions des squelettes de la Barma grande, fut invité par le Prince à faire leur étude anthropologique. Il n'eut pas de peine à montrer que les uns et les autres appartiennent nettement à la race de Cro-Magnon. Ce fut la tâche de mon cher ami Cartailhac, dont notre science portera longtemps le deuil, de montrer, dans le mémoire archéologique dont il voulut bien se charger, que toutes ces sépultures, aussi bien celles de la Dordogne que celles de la Côte d'Azur se présentaient avec les mêmes dispositifs : coquilles percées, objets d'ornementations, os colorés en rouge, etc., et témoignent d'une même civilisation.

Les deux squelettes du niveau inférieur sont d'un âge plus ancien, d'ailleurs difficile à préciser, mais que j'ai tout lieu de croire Moustérien ou confinant au Moustérien. Ils ont également été l'objet d'une sépulture et vous savez tous qu'après les avoir magistralement étudiés, M. Verneau a reconnu qu'ils appartenaient à une race particulière, présentant de nombreux caractères négroïdes et qu'il a nommée "race de Grimaldi." Le fait est d'importance capitale à divers égards.

D'abord parce que nous sommes ici en présence d'un type humain d'âge très voisin de celui de Néanderthal, sinon du même âge, et que la coexistence en Europe occidentale, à une même époque géologique, de deux formes humaines si différentes donne beaucoup à penser. Ensuite parce que les ressemblances de ce nouveau type, offrant avec certaines races africaines de l'*Homo sapiens* beaucoup de traits communs, nous portent à croire que les "statuettes de Menton," aux caractères également négroïdes et stéatopyges, sont de grossières effigies de ce type.

L'authenticité de ces statuettes fut longtemps discutée, ce qui tenait à ce que les circonstances précises de leur découverte restaient, volontairement d'ailleurs, assez obscures, Rivière et G. de Mortillet les considéraient comme l'œuvre d'un habile faussaire qui aurait voulu imiter les figurines en ivoire découvertes par Piette à Brassempouy dans les Pyrénées. Et un autre objectif des fouilles ordonnées par le Prince était d'éclaircir ce mystère. A cet égard encore les résultats furent appréciables. Si l'on ne découvrit pas de nouvelles statuettes, on trouva, dans un foyer aurignacien de la Grotte du Prince, un morceau de roche tendre, ou stéatite, identique à la matière première des statuettes et qu'on avait commencé à sculpter. S'il fallait encore une nouvelle preuve de l'authenticité et de l'antiquité de ces objets d'art primitif on la trouverait dans la physionomie uniforme et comme l'air de famille que présentent toutes les trouvailles du même genre effectuées dans des contrées différentes et fort éloignées les unes des autres. Tout récemment, cet été, M. et Mme de Saint-Périer ont découvert dans une grotte des Pyrénées, toujours à un niveau aurignacien, une admirable statuette féminine en ivoire, l'un des plus beaux objets qui aient été trouvés jusqu'à ce jour dans un milieu paléolithique. Or cette statuette est d'un style très voisin de celui des figurines de Menton. Vous pourrez en voir très prochainement des reproductions photographiques et une description dans l'*Anthropologie*.

Tels sont les principaux résultats des travaux effectués sous la direction et aux frais du Prince de Monaco dans les grottes de Grimaldi. Les précieux documents, retirés de ces excavations et ramenés au jour après tant de millénaires, constituent les plus vénérables archives de l'Humanité. Il faut les conserver comme on conserve les archives de l'Histoire écrite et le Prince organise, dans ce but, le Musée anthropologique de Monaco dont il confie la direction à son savant et dévoué collaborateur M. de Villeneuve. Là sont exposés méthodiquement, dans des salles claires aux grandes baies s'ouvrant sur la mer bleue, une innombrable série d'objets ordonnés et étiquetés avec soin. De grands échantillons donnent une idée des caractères et de la composition de certaines assises fossilifères. Des vitrines verticales sont remplies des plus belles pièces paléontologiques. Les squelettes humains occupent le centre de la principale salle du premier étage. Ils sont entourés des objets archéologiques classés par niveaux. Sur les murs, plans et coupes des cavernes des Baoussé-Roussé permettent aux visiteurs de se rendre compte de l'allure

et de la stratigraphie des gisements. D'autres salles renferment, entre autres collections, les produits des fouilles exécutées également dans diverses grottes situées sur le territoire même de la principauté et notamment dans les grottes néolithiques des Bas-Moulins et des Spélugues.

Tout cela constitue un ensemble qui reçoit journallement beaucoup de visiteurs et qui intéressa vivement les membres de la XIIIème session du Congrès international d'Anthropologie et d'Archéologie préhistoriques tenu à Monaco en 1906.

C'est encore un grand service que le Prince rendit à nos études lorsqu'il voulut bien prendre sous sa protection ce Congrès dont les destinées paraissaient alors bien compromises. Et ceux d'entre vous qui ont assisté à la session de Monaco se rappellent encore le succès de cette réunion embellie de toutes les séductions d'une hospitalité vraiment princière. Qu'il me soit permis de regretter ici qu'après la période terriblement stérile de la grande guerre, les anthropologistes n'aient pas compris qu'au lieu de chercher à créer une nouvelle organisation plus ou moins internationale, ils devaient s'attacher à faire revivre une Institution dont le brillant passé pouvait répondre de l'avenir.

Le Prince, heureux des résultats qu'il avait ainsi obtenus, ne demandait qu'une nouvelle occasion de rendre à la Paléontologie humaine d'autres services. Elle ne tarda pas à se présenter. De toutes parts les découvertes relatives à l'art quaternaire se multiplient. Cartailhac revient d'Altamira avec des cartons bourrés de photographies et de dessins au pastel habilement relevés par M. Breuil. Dans son enthousiasme, il fait exécuter de magnifiques planches chromolithographiques pour l'ouvrage qu'il compte publier avec son collaborateur. Mais il ne tarde pas à s'apercevoir que l'entreprise est trop onéreuse et au-dessus de ses moyens financiers. Avec le savant et regretté archiviste du Palais de Monaco, Gustave Saige, je n'eus pas de peine à intéresser le Prince à l'œuvre en souffrance. Il prit généreusement à sa charge tous les frais de la publication de ce magnifique volume, aujourd'hui dans toutes les grandes bibliothèques du monde entier, qui a pour titre : *Altamira*, et qui n'est que la tête de ligne d'une série de volumes magnifiques consacrés à la description des peintures et gravures murales des cavernes paléolithiques.

M. Breuil s'est particulièrement distingué dans ce nouvel ordre de recherches. Le Prince lui donna toutes facilités pour poursuivre ses travaux non seulement en France mais en Espagne, et c'est à cette double intervention qu'est dû le grand essor des études préhistoriques dans la péninsule Ibérique, développement dont nous sommes, depuis quelques années, les témoins ravis.

Cette période, d'une dizaine d'années, précédant immédiatement le terrible phénomène de régression humaine provoquée par l'Allemagne en 1914, fut vraiment en France une belle période pour la Paléontologie humaine et la Préhistoire. Les chercheurs étaient nombreux ; ils faisaient dans toutes les régions de la France des observations utiles, parfois de belles découvertes. Dans les Pyrénées, déjà illustrées par les récoltes et les travaux de Piette, Cartailhac, Breuil, Bégouen constataient

que beaucoup de cavernes étaient de véritables musée d'art quaternaire dont ils se hâtaient de nous faire connaître les chefs d'œuvre par des publications préliminaires. Dans la Dordogne, Rivière, Capitan, Peyrony, Bouyssonie, je ne cite que les meilleurs ou les plus heureux, exhumaient aussi des merveilles. Le Dr. Lalanne nous révélait la superbe frise de chevaux sculptés et les bas-reliefs à figurations humaines de Laussel. Et, au même moment, MM. les Abbés Bardon et Bouyssonie exhumaient l'Homme de la Chapelle-aux-Saints, MM. Capitan et Peyrony découvraient, dans les dépôts de la Ferrassie, toute une série de squelettes de même époque et non moins bien conservés, tandis que, non loin de là, à La Quina, le Dr. H. Martin ramenait au jour des documents analogues et d'égal intérêt. Grâce à toutes ces précieuses découvertes, l'Homme moustérien de notre pays, l'*Homo Neanderthalensis* a pu être étudié d'une manière aussi complète que possible, dans toutes les parties de sa charpente osseuse qui nous est aujourd'hui mieux connue que celle de beaucoup de sauvages actuels. La multiplicité des découvertes a permis de démontrer la très intéressante homogénéité de ce type archaïque. Ce sont là de grands progrès dans le domaine de la Paléontologie humaine ; l'esprit du Prince de Monaco en fut vivement frappé.

La première dans l'ordre chronologique de ces découvertes, celle de l'Homme de La Chapelle-aux-Saints, eut un grand retentissement. Après sa présentation dans les milieux purement scientifiques, la grande presse la fit connaître au public qui marqua pour elle une vive curiosité. A cette époque, d'innombrables visiteurs défilèrent dans mon laboratoire du Muséum pour voir le crâne déjà devenu célèbre et ces visiteurs appartenaient à toutes les catégories sociales ou intellectuelles de la capitale. Le Prince de Monaco voulut accomplir lui aussi cette sorte de pèlerinage. Il vint me voir un après-midi d'été. Très impressionné à la vue du vénérable document ostéologique, il resta fort longtemps à le contempler, à l'examiner sous toutes ses faces, à scruter les détails particuliers de sa morphologie. Puis le soir tomba ; le couchant s'embrasa derrière le dôme du Panthéon et les silhouettes plus fines des autres monuments de la montagne Sainte-Geneviève. Là, devant ce beau spectacle, le Prince me fit part d'un nouveau projet auquel il pensait depuis longtemps et qu'il était maintenant décidé à mettre en exécution. Et il me demanda de lui préparer un plan d'organisation d'un Institut de Paléontologie humaine.

Son esprit avait été vivement frappé du contraste que présentent, d'une part, l'immense intérêt et l'importance philosophique de nos études et, d'autre part, la faiblesse des moyens d'action mis jusqu'alors au service de la Paléontologie humaine, science bien française et pourtant à peu près ignorée des pouvoirs officiels, académiques et universitaires de notre pays. Et, dans sa grande bonté, il voulut être le Prince Charmant de cette nouvelle Cendrillon. Il définît magnifiquement son but par la première phrase de la lettre qu'il écrivit le 23 novembre 1910 au Ministre de l'Instruction publique pour lui annoncer ses intentions.

“ Au cours de ma vie laborieuse, disait-il, j’ai souvent regretté qu’une place plus grande ne fût pas attribuée, dans le mouvement intellectuel de notre époque, à l’étude du mystère qui enveloppe les origines de l’Humanité. A mesure que mon esprit s’éclairait par la culture scientifique, je souhaitais plus ardemment de voir s’établir sur une base méthodique les investigations nécessaires pour évoquer les traces fugitives que nos ascendants ont laissées dans le sein de la terre pendant une incalculable succession de siècles. Et je pensais que la philosophie et la morale des sociétés humaines seraient moins incertaines devant l’histoire des générations écrite avec leur propre poussière.”

Ayant ainsi résolu de créer “ un foyer puissant d’études basées sur des fouilles méthodiques,” le Prince de Monaco le dotait d’un immeuble qu’il devait faire construire et d’un capital de 1,600,000 francs. Le 15 décembre 1910, l’Institut de Paléontologie humaine fut reconnu d’utilité publique par l’Etat français.

D’après ses statuts, le nouvel Établissement, placé sous ma direction, a pour but le progrès de la science sur toutes les questions relatives à l’origine et à l’histoire de l’Homme fossile.

Les principaux moyens d’action sont : 1°. des laboratoires où est étudié le produit des fouilles effectuées par le personnel de l’Institut ou d’autres travailleurs sous sa direction ; 2°. des publications servant à faire connaître les résultats des fouilles et des recherches scientifiques ; 3°. des cours et des conférences sur la Paléontologie humaine et la Préhistoire.

Sans attendre la construction du bâtiment, qui devait exiger un certain temps, les professeurs, MM. Breuil et Obermaier, entreprirent en France, en Espagne, dans l’Europe centrale, des explorations et des fouilles considérables, tandis qu’un certain nombre de travailleurs indépendants étaient encouragés dans leurs recherches au moyen de subventions.

Le nouvel édifice construit par l’architecte Pontremoli, ne tarda pas à s’élever. Il orne aujourd’hui de ses façades élégantes cette partie du boulevard Saint-Marcel naguère occupée par le Marché aux chevaux. Ses façades offrent une œuvre sculpturale due à l’habile ciseau de M. Constant Roux et dont l’idée est due à notre fondateur lui-même. Le Prince de Monaco a voulu, en effet, que son nouvel Institut ait des dehors séduisants, d’une belle tenue artistique et révélant, dès l’abord, par le choix des motifs décoratifs, tout l’intérêt des études qui s’y poursuivent.

De vastes sous-sols comprennent des salles de déballage et de classement provisoire des produits de fouilles, des ateliers de préparation et de moulage. Au rez-de-chaussée se trouvent une grande salle de conférences et d’exposition, les services généraux, Direction, secrétariat, des laboratoires de photographie et de chimie, les cabinets de travail des professeurs.

L’Institut n’est pas un Musée et son but n’est pas d’amonceler des collections. Mais il doit avoir, pour l’enseignement et pour l’étude, des séries aussi complètes que possible d’objets de comparaison, dans les divers domaines de l’Ethnographie

préhistorique, de l'Anthropologie, de l'Anatomie comparée et de la Paléontologie des dernières époques géologiques. Ces séries, dès aujourd'hui fort importantes, sont disposées et classées dans trois salles dites de comparaison qui entourent au premier étage, une vaste bibliothèque et qui sont comme le complément de celle-ci : les objets d'étude à côté des livres. La bibliothèque, qui vient de s'enrichir de la précieuse collection de livres d'Emile Cartailhac, est aménagée, également en salle de travail, et quelques cabinets, à ce même étage, sont réservés à des savants de distinction qui désireraient faire un séjour à l'Institut.

Les matériaux des fouilles, ainsi déballés, triés, nettoyés, préparés, dans les salles du sous-sol, photographiés au rez-de-chaussée, étudiés au premier étage, doivent faire l'objet de mémoires imprimés. Le deuxième étage comprend, avec une salle de dessin, des pièces où sont emmagasinées les publications. Celles-ci servent à enrichir la bibliothèque de l'Institut par voie d'échanges. Quelques exemplaires sont mis dans le commerce par l'intermédiaire de MM. Masson et Cie, éditeurs.¹

L'Institut devait être inauguré à la fin de 1914. La guerre a été cruelle pour lui comme pour tous les autres établissements scientifiques. Pendant six ans il a dû vivre d'une vie ralentie. Le 23 décembre 1920, il fut officiellement inauguré en présence de M. Millerand, Président de la République française et de nombreux invités : membres du gouvernement, du corps diplomatique, des grands établissements scientifiques, des Sociétés savantes, représentants de la presse, etc.

Un an après, le 18 février 1922, le Prince avait la joie de présider la première conférence publique et de constater le succès vraiment populaire de l'œuvre qu'il venait de réaliser. Malgré un état de santé qui causait déjà de vives inquiétudes à son entourage, il prononça un discours, où, comme toujours, l'originalité et la richesse de la forme habillaient de fortes et nobles pensées, et dont chaque phrase témoignait de son respect et de son amour de la Science. " Vous êtes ici, disait-il, dans un temple nouveau que j'ai fait sortir de terre pour que l'Anthropologie appuyée sur des lois solennelles puisse planer un jour sur les mystères qui nous enveloppent. Je veux qu'elle apporte à la civilisation le concours des grandes forces contenues dans son sein et qui purifieront nos mœurs, nos idées, nos rapports sociaux quand l'Humanité saura d'où elle vient et comprendra où elle va." L'auditoire, que ne pouvait contenir la salle de conférences, le remercia par une longue ovation.

¹ Voici les principales de ces publications : *Les Grottes de Grimaldi*, par MM. de Villeneuve, M. Boule, E. Cartailhac, R. Verneau, 2 vols., in-4° avec 64 planches en héliogravure ; la série, comprenant 5 vol. in-4°, des *Peintures et gravures murales des cavernes paléolithiques*, avec un total de 217 planches hors texte en noir ou en couleurs ; *Les anciens Patagons*, par le Dr. R. Verneau, 1 vol. in 4° avec 15 planches ; le 13ème session du *Congrès international d'Anthropologie et d'Archéologie préhistoriques*, Monaco, 1906, 2 vol., in-8° ; et une petite série de *Rapports annuels* par le Directeur et les Professeurs.

Ce fut sa dernière visite à l'établissement dont il était véritablement fier et auquel il témoignait l'affection d'un Père pour son dernier-né. Quelques semaines plus tard, sur son lit de souffrances, il m'entretenait du bel avenir qu'il entrevoyait pour notre Science. Et, d'un ton affectueux que je n'oublierai jamais, il voulait remercier une fois de plus ses collaborateurs pour les joies intellectuelles qu'ils lui avaient procurées et qui étaient celles auxquelles ce Prince souverain attachait le plus de prix. Quelques semaines après, le 26 juin dernier, il succombait. Son testament, rédigé en des termes d'une rare noblesse, constitue un dernier et éclatant témoignage de son dévouement aux intérêts de la Science, principal but d'une vie toute consacrée au travail et aux progrès de l'Humanité.

Vous le voyez, Messieurs et chers Confrères, une telle existence et une telle œuvre dépassent, par leur grandeur et leur portée, les limites du territoire géographique où elles se sont déroulées. Les éminents services rendus à la Science par le Prince Albert Ier de Monaco n'ont pas été exclusivement en faveur de la France dont il fut toujours l'ami fidèle et dévoué. Les résultats acquis, grâce à son influence et à ses libéralités, font aujourd'hui partie du patrimoine universel. Et l'action, dont mon pays a le premier bénéficié, fut aussi bienfaisante pour d'autres pays, où elle s'exerça comme une sorte de force catalytique déterminant une grande activité dans le champ de nos études et provoquant partout une belle émulation. Ce ne sont donc pas les seuls progrès accomplis en France au cours de ces vingt dernières années dans le domaine de la Paléontologie humaine qui relèvent en grande partie de l'œuvre anthropologique du Prince Albert ; les progrès accomplis un peu partout en dépendent aussi d'une façon plus ou moins étroite.

C'est par la réalisation indéfinie des progrès de cet ordre que ce " Prince de science et d'art," que ce " Prince utile " entrevoyait pour l'Humanité de meilleurs jours, comme en témoigne cette phrase écrite par lui : " J'ai cultivé la Science parce qu'elle répand la lumière et que la lumière engendre la justice."

THE ETHNOLOGY OF MALTA AND GOZO.

By L. H. DUDLEY BUXTON.

(Department of Human Anatomy, Oxford.)

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[The figures in brackets in the text refer to Appendix I, Literature.]

I.—INTRODUCTION.

THIS report refers to a part of the material collected in December, 1920, and January, 1921, by an anthropological expedition from Oxford. The expedition was made possible by the generosity of Sir Alfred Mond and a grant from the Mary Ewart Trust. Most of the measurements on crania, on the women, and on about a hundred men and women at Gozo, were done by Mrs. Jenkinson and Miss Moss working together. Miss Russell measured long bones and about half the children.¹ The remaining measurements were done by the present writer. As far as possible all the skeletal material was examined by the present writer, who is ultimately responsible for the sexing. Mr. Hort was occupied in working at the archæological problems. I am indebted to Mrs. Jenkinson and Miss Moss for working out a number of indices on the living, and to Miss Russell for help in tabulation.

We all wish to express our thanks to the Governor of Malta (Field-Marshal Lord Plumer), who gave us official support, took a great personal interest in our work, and smoothed away many of the difficulties; and to the Lieutenant-Governor, Mr. Robertson. Dr. Zammit, the Rector of Malta University and Curator of the Museum, set his unrivalled knowledge of the island at our disposal, and gave us every possible help. Our thanks are also due to various members of the Department of Public Health, who sacrificed busy days in order to take us into villages where they happened to be known; to Count Caruana Gatto, for instructing me in the botany of Malta; and to numerous other friends who did everything in their power to enable us to collect data in Malta.

¹ It is hoped to utilize the material dealing with the long bones and with the children in subsequent papers.

In Oxford, Professor Arthur Thomson has set the resources of his Department, including a calculating machine, at my disposal, and has helped me continually with advice and kindly criticism. My former teachers—Sir Arthur Evans, Mr. Henry Balfour, Mr. E. T. Leeds, and Professor J. L. Myres—have accorded me in many conversations the combined privileges of a colleague and a pupil. I fear that I have, albeit unwittingly, often pirated their ideas. My colleague, Miss Blackwood, has devoted the greater part of a Long Vacation to helping to finish and prepare this paper for the press before my leaving England, and has performed the laborious task of looking over proofs in my absence.

II.—GEOGRAPHY.

The Maltese archipelago consists of the islands of Malta, Gozo, Comino, Cominetto and Filfolà. The two latter are uninhabited, and Comino is practically untenanted. We are therefore only concerned with the islands of Malta and Gozo.

Malta lies about 60 miles south of Sicily and 180 miles north of the African coast. Its maximum length is $18\frac{1}{2}$ miles, its maximum breadth $8\frac{1}{2}$ miles, and its area 95 square miles. Gozo is considerably smaller, and has an area of about 20 square miles.

Geologically, the islands are Late Eocene (3). The eastern and most thickly inhabited part of Malta consists of globigerina limestone, which overlies lower coralline limestone; in the western part these beds are covered with beds of greensand and blue clay or marl, over which lies the upper coralline limestone. The rock is everywhere extremely friable, and is perpetually disintegrating under the influence of wind and rain. Except in one or two places the soil is seldom more than a few inches deep.

The surrounding seas are warm and shallow; a rise of 50 fathoms would connect Malta and Sicily, and a rise of 200 fathoms would join North Africa and Europe and include Malta as a craggy bastion. The shallowest sea, however, lies more to the west. Malta should, therefore, be more correctly described as an outlying pier of an old land bridge rather than part of the land bridge itself. It seems probable that slow, tectonic movements are actually in progress to-day, and that the archipelago is sinking; but it is extremely unlikely that any men of whom we possess traces at present, with the doubtful exception of a few fragments from the Weid Dalam, came to Malta when it was still part of the mainland.

The island is tilted from south to north. The cliffs along the southern coast are high and precipitous, and some of the loftiest parts of the island are close to the shore.

The undercliff here forms a pleasant contrast to the less fertile parts of Malta. Carib trees are not uncommon, potatoes are cultivated on terraces, and the tiny fields are irrigated, as elsewhere in Malta, by little runlets conducted along channels

made of open stone pipes. On the rocks, in January, there was a wild profusion of flowering heath, of a species akin to our heather (*Erica*). Where the water overflows, there are tiny reed beds, but always smaller and less luxuriant than those of the Eastern Mediterranean. In some places on these cliffs the charlock appears to have competed successfully with *Oxalis cernua*.

The north coast is generally more shelving. There are no mountains, but the whole surface is cut by deep ravines, which are for the most part dry, but which may contain as much as three feet of water during a spate; the mouths of some of these valleys form small fiords. The western part of the island, which contains the upper coralline beds, contrasts strongly with the eastern. The hills are higher, the valleys bigger and more rounded, and the country is less parched, owing to the underlying marls. The scenery of Gozo resembles that of Western Malta, but the cliffs are higher and grander, the fields are larger, and the country is greener.

Owing to the large population every foot of soil is precious, and the whole of Malta is parcelled out into innumerable tiny fields, some hardly more than a few yards square, each being separated from the next by a stone wall. Olives and caribs grow as elsewhere in the Mediterranean, but for the most part they are limited to the courses of the streams; oranges flourish where there is sufficient water to irrigate them, but in Malta one looks in vain for the abundant orange groves of Sicily, or the pleasant tangled hillsides of Northern Cyprus. The myrtle is almost absent, the numbers of wild myrtle bushes can nearly be counted on the fingers of a man's hands. The flora (4) generally is most akin to that of Sicily; 94 per cent. of the Maltese species are found in that island, 91 per cent. in Africa, and 90·5 per cent. in the Levant (5). There are three things which are predominant in all the scenery of Malta: stone walls, goats, and the yellow flowers of the virulent *Oxalis cernua*, which not even the goats will eat.

Owing to the small size of Malta and the nature of its surface, the weather is dominated by two factors—the sea and the direction of the wind. The mean annual temperature is 66·6° F., the mean annual rainfall is 21·6 inches, precipitation normally occurring on 81 days. The mean relative humidity for seven years is 79·1 per cent. The coldest month is February (mean temperature 52·9° F.); the hottest August (77·9° F.). During June and July practically no rain falls, and in August the mean is only 0·13 mm. (6).

In working out constants, I have divided the islands into two areas—Urban and Rural. This is the division in the census (31), and corresponds very closely to a marked difference in the conditions under which the population lives. The former includes the fortified towns and suburbs, Valletta, Floriana, Cottoneria, Senglea, Conspicua, Sliema, St. Julian, Pieta Misida, Hamrum, Birchircara, Curmi, Paula, Tarxien, Zabbar, Calcara and Rabato; the latter, the more isolated villages in the country.

The fortified towns and suburbs, apart from Rabato, form a practically continuous inhabited area. The population, especially in the suburbs, is extremely overcrowded. The country villages are irregularly built along a series of winding lanes, which converge on an open space not infrequently situated in front of the village church. In a corner of such a *piazza* there is usually a café, and it is here that the majority of measurements of the country people were taken, very often as the men came out of Mass on Sunday. Some of the villages have orange gardens, wherever there is sufficient water to spare for irrigation purposes.

Although with modern means of transport it is possible to visit practically the whole island in one day, many of the villages are nearly endogamous, in spite of the absence of geographical boundaries. The men of one village will certainly not seek their wives from a neighbouring village. If they marry outside their own hamlet, it will probably be with a girl from the suburban area. Similarly, many of the town dwellers find wives among the daughters of the country folk. No such distinctions appear to hold in the urban districts. Communications within this latter area are good and cheap, and extensive use of them appears to be made by the whole population.

III.—HISTORY.

The ethnological history of the archipelago is not as yet very clear, and further evidence is badly needed. A very interesting cave, usually known as Ghar Dalam, has been excavated by Mr. Despott, to whom I am indebted for permission to examine his finds and his MS. notes. The valley (the Weid Dalam) in which this cave is situated, shows signs of three terraces. The earliest terrace is high above the present level of the stream, which runs on the level of the old second terrace, and the third terrace, on a still lower level, is in most places filled up by *débris*, brought down by the present stream or its immediate predecessor. The second terrace appears to belong to two different periods, as there are in places marks on the rock of undercutting by the swirling of a stream at two very different levels. The river which cut out these terraces must, at least in flood time, have contained a considerable volume of water. The modern stream is, however, even at the wettest time, hardly more than a series of disconnected pools. The Ghar Dalam cave belongs to the earlier part of the second terrace. It contained numerous sherds, mostly Bronze Age. By far the greater part of the cave, however, was filled up with a very large number of bones, the majority of which belonged to a species of pygmy hippopotamus. These bones, and even the teeth, show considerable evidence of attrition by water.

In this fossil bed Mr. Despott claims to have discovered the remains of Neandertal man. All the human remains that have been found consist of very small fragments, and apart from one tooth, there is no evidence to show that these bones really belong to Neandertal man. The tooth is a molar exhibiting unusual characters, but in the absence of X-ray photographs or a section, and comparison with

authenticated material, it is hardly possible to state definitely that Neandertal man was living in Malta at the time when the rivers were large and the pygmy hippopotamus abundant. It is further remarkable that in a deposit which appears to be admirably suited for the preservation of bones, only small fragments of man have been found. In such a dry climate as that of Malta, cracks may have occurred in the floor of a cave, down which tiny fragments of bones may easily have fallen. There are some gravel terraces in the neighbourhood of Zebbug, which should certainly be explored for traces of Palæolithic man in the island.

The peculiar form of the Maltese sanctuaries has been discussed with great wealth of detail by Professor Zammit, with special reference to the site at Hal Tarxien. He is inclined to believe that they belong to the Neolithic period. There is certainly an entire absence of metal in the "Neolithic" stratum, and the stone masonry has not been worked with metal tools. The development of pottery, however, suggests a Late Neolithic or even an Eneolithic stage, not improbably of comparatively late date. There is considerable evidence to suggest that the buildings were extremely holy places, and there are numerous parallel examples from other parts of the Mediterranean which indicate that under certain conditions metal, or at a later date iron, was tabu in particular sanctuaries. We know nothing at present about the domestic culture of these megalith builders, and it is unsafe to argue from their sanctuaries that they were unacquainted with the use of bronze. The period may be provisionally termed "Malta Local Neolithic."

Although the majority of the material found at Hal Safiieni¹ is Neolithic, a number of undoubtedly Bronze Age wares of coarse types, and fragments of large vessels similar to the cremation urns of the Hal Tarxien Bronze Age period were found there. In spite of the very large number of bones which I examined, however, I did not find any definite traces of cremation; and with such evidence as I possess at present, I think it is justifiable to conclude that we are dealing with material anterior to the Bronze Age at Hal Tarxien, *i.e.* belonging to the Malta Local Neolithic period. Some bodies were undoubtedly buried *in situ*, but the majority appear to have been brought there, possibly from various parts of the island; probably they were exhumed and stored in the Hypogæum. The fractures on many of the bones and the comparative absence of complete long bones, suggests exhumation, a practice still widely distributed in the Mediterranean.

The very close resemblance between the incised "Neolithic" ware from Hal Tarxien and that from Santa Verna in Gozo, suggests that at this time there must

¹ The Hypogæum at Hal Safiieni consists of a series of artificial caves hollowed out underground. In addition to numerous small objects, statuettes and sherds, these caves contained a very large number of human bones. The carvings, which are dolmenic in form, and the spirals in red ochre on the roof, have inclined Professor Zammit to believe that this is a sanctuary. Whatever its true purpose, the Hypogæum certainly forms an extensive ossuary of "Malta Local Neolithic" material.

have been considerable intercommunication at least between these two places and admits the possibility of some of the bones in the Hypogæum coming from a distance.

A careful examination was made of the bones found in the Neolithic stratum at Hal Tarxien. These were all, as far as could be made out, those of domestic animals, the ox and the sheep predominating.¹ A number were either calcined, or had the semi-calcined appearance of bones which had formed part of a roast joint. It seems reasonable to follow Professor Zammit's suggestion that a number of these bones were those of sacrificial animals. No trace of human bones was discovered in the stratum of this period at Hal Tarxien. The very big dust deposit which occurs on top of the Neolithic stratum suggests a rather dryer climate than occurs at present. If the climatic conditions had been similar throughout the ages, there appears to be no reason why such a deposit should not also have occurred at other times. Without laying undue stress on what must necessarily be a hazardous hypothesis, there are slight indications from osteological evidence, as we shall hope to show later, that there was a difference in climate at the time when Hal Tarxien was built and modern days.

The ground plan of Hal Tarxien and the other sanctuaries remains to be explained. Speaking generally, each sanctuary may be described as a series of three consecutive apses growing successively smaller. At the end of the third apse, in what appears to have been the holy place, there is usually a small dolmen-shaped cist, sometimes with a hole on top and in front. In such cists large numbers of animal bones have been found. It is suggested by Professor Myres that such a plan is the final outcome of the *allée couverte*.

The general dolmen-like features of a number of the recesses of some of the sanctuaries, and of the stonework in the Hypogæum at Hal Safieni, together with the terra-cotta objects which have been found, suggest that the megalith builders were familiar with dolmens, of which there are examples in the island; and it seems just possible that in Maltese soil the structure, which elsewhere developed into the most elaborate form of chambered barrow, may have become the three-apsed shrine. It must be remembered that it would be impossible in Malta to build any form of barrow, owing to the absence of surface soil.

It is interesting to note that except for certain differences in the form of the nose, the people that we associate with the dolmen culture in Western Europe closely resemble the people buried in the Hypogæum at Hal Safieni.

The human remains of Bronze Age date are unfortunately scanty, and are limited to calcined fragments from Hal Tarxien. The finds at Bahria, a site which has not yet been properly excavated, suggest a settlement of foreign immigrants to a place which, as the name implies, is one of the few spots in that part of the island where the sea is easy of access. This may have been the first introduction

¹ Some dogs' bones were found, possibly of doubtful antiquity.

of metals to the island. Bronze Age pottery is less highly finished than the Neolithic ware, but although the two are certainly distinct, there are transitional forms.

From an ethnological point of view it would appear that the Bronze Age, or the end of the Neolithic Age, was in many places a crucial period. It is difficult, however, to parallel this in Malta by linking up the osteological and the archæological material. As we shall hope to show later, the Megalithic people in Malta appear to be very distinct from the later inhabitants, and to present certain Armenoid characteristics. Sir Arthur Evans¹ has pointed out that there was a western colonial movement from the mainland of Greece towards the close of the period which he has termed Late Minoan III. There is evidence of such a movement in cemeteries near Syracuse. Up to the present, however, there is no evidence of Malta being connected with the East at so early a date. It has further been suggested that at some period in the early history of the island a complete destruction of the old population took place.

The sherds from Kallilia appear to be similar in fabric and design to those of the Hal Tarxien Bronze Age. During the so-called "Phœnician" period we have cultural evidence of connection with the Ægean and North Africa, and it would appear that then, if not earlier, the final shaping of the present population was taking place, and that the mixed "island people" of the Eastern Mediterranean were sufficiently firmly established to swamp any further immigration of invaders belonging to a pure Mediterranean strain.

The Punic influence, though culturally no doubt of importance, does not seem to have altered the population physically, and though at this time the connection with North Africa was undoubtedly close, it was not sufficiently strong to counteract the change wrought by the sea rovers from the islands, and to restore a type similar to that of Neolithic times.

Until the Roman occupation at the end of the third century B.C. Malta appears to have been closely connected with North Africa. Rome held the islands as a military or semi-military outpost until nearly the end of the second century A.D. The period usually known as "Roman" in Malta should be more correctly described as Romano-Maltese; although Rome was the ruling power and much Roman culture was introduced, there are few references to Malta in Roman literature, and from an ethnological point of view the island was certainly working out its own salvation.

The archipelago was given practical autonomy and made a municipium about A.D. 177. On the division of the Empire, in A.D. 395, the islands were taken over by the Eastern Empire, to which they were certainly ethnologically akin. Invasions of barbarians may possibly have occurred, but when the Arabs captured the islands in 870 they found a Byzantine garrison in occupation. Robert of Sicily, with a

¹ "Prehistoric Tombs of Cnossos," *Archæologia*, LIX, p. 107.

small handful of Knights, took over Malta in 1090. The islands became part of the kingdom of Sicily, and shared its varying fortunes till they were ceded to the Knights of St. John by the Emperor Charles V in 1530.

For the next three centuries the history of the Knights is so intimately concerned with the history of Malta that we must at least briefly consider the general position of the Order.

The Knights Hospitallers of St. John of Jerusalem were finally ejected from the coast of Syria at the end of the thirteenth century. They occupied Rhodes in 1308. This island formed their home for over two hundred years. Early in 1523 they were driven from Rhodes, taking with them 4000 Rhodians. Given a temporary home at Viterbo by Pope Clement VII, a member of their own Order, they finally received the island of Malta from the Emperor Charles V under conditions of nominal feudal submission, to wit, the Grand Master to send a falcon to the Viceroy of Sicily every All Souls' Day.

The Order had an international character, and in the sixteenth century was divided into eight "Languages" or "Langues," according to the origin of the Knights, namely, Provence, Auvergne, France, Italy, Aragon, England, Germany and Castile. The English "Language" was suppressed in 1540, previous to which time many of the Knights who had been in England (the Grand Priory was situated in Clerkenwell) had either fled to Malta or been executed. The fiction of an English "Language" was, however, kept, and as late as 1782, on the foundation of a Bavarian "Language," this latter was united to the old English "Langue," which of course in reality no longer existed, and called the Anglo-Bavarian. The dominant element in the population of the Knights was certainly French, and the three French "Langues"—Provence, Auvergne and France—were certainly, both ethnologically and politically, the most important. The latter aspect was reflected in the great number of French Grand Masters.

For a generation after the occupation of the island by the Knights, Malta gradually succeeded in establishing an important position in the Mediterranean. There seems little doubt that men like Strozzi, La Vallette, Charles of Lorraine, and de Romegas were practically pirates, at least as far as their treatment of the Turk was concerned, and at this time a very large number of Turkish slaves, presumably chiefly of Negro origin, were introduced into the island. In 1564 Suliman the Magnificent decided to attack Malta. The story of the siege of Malta in 1565 is a magnificent passage in the history of this very distinguished Order of Chivalry. It only concerns us so far as it resulted in a reorganization of the fortifications of the island and the building of the great city of Valletta, called after the Grand Master of the Order, Jean Parisot de la Vallette. It is important for our purpose to remember that when the Turks were eventually driven from the island, the Order had only 600 men capable of bearing arms who had survived the struggle.

The building of Valletta was begun by La Vallette and continued by subsequent Grand Masters. The majority of the labourers employed appear to have been slaves, although a certain number of men are said to have been imported from Sicily and Calabria. It is difficult to estimate how far an industrial population, which must have amounted to over 8000 men, can have affected the ethnology of the island.

It will be seen, then, that the population of the urban districts, including as it does such a very large proportion of the total inhabitants of the island, is comparatively new to its present surroundings. We have not got in Valletta, as we have in some parts of the Mediterranean, a town site which has been occupied more or less continuously since the dawn of history. We do not know, of course, what was the condition of Mount Sceberras before Valletta was built, but it certainly was not in any way an urban area, the old town having been what is now known as Citta Vecchia.

The subsequent history of the Order is not of great importance from the ethnological point of view. The Knights did not succeed in suppressing the Barbary corsairs, but carried on a number of sea-faring expeditions, especially in the Levant, although during the seventeenth century there were numerous sea battles between the Knights and the corsairs.

During the occupation of the Order, the food supply of Malta was imported from Sicily, and when diplomatic relations were strained between the Order and the King of Spain, shortage of food often became very marked. The relations between the Maltese and the Knights are difficult to sum up briefly. During the earlier days the privileges of the natives were only limited as far as military necessity, and, to a certain extent, financial obligations demanded. In later days the Maltese were employed as labourers, as soldiers, and as sailors, and although we find that in many cases the Grand Masters behaved generously to native women and children, the general record of the Knights, especially in the years before the final crash came, were unworthy of the ideals of an ascetic Order.

The Order ruled the island until the final break-up of the last relics of Mediæval Europe by Napoleon. The French garrison surrendered to the British in 1800, after holding the island for two years. Malta was formally ceded to the British crown in 1814.

IV.—DEMOGRAPHY.

It has been suggested that the large number of bones found in the Hypogæum is evidence of a large population in Neolithic times. The place is, however, probably an ossuary, and may have been in use over a long period. The earlier records are for the most part unreliable. In 870, 3000 Greeks are said to have been killed, and 3614 women and 5000 children sold into captivity. This suggests a large population. In 1530 Boisgelin's figure (23) is 15,000, but Miège (27) suggests a population of 29,659. After the attack of the Turks in 1566, the total is said to have dropped to 10,000. The emissary of Pope Gregory XIII reported the

population as 20,000 in 1582. In 1632, 50,113 is given, and in 1667, 53,000. In 1741, 110,000 is the population, which is said to have increased to 114,000 in 1798. The figures for Malta and Gozo in 1826 are stated to be 119,736. But the first reliable figure is 115,945 in 1828. In 1881 the population was 132,129 in Malta and 17,653 in Gozo; in 1901, 184,742, and 1911, 211,564.

In regard to the proportion of the sexes there were in 1911 110 bachelors to 100 spinsters, 98 husbands to 100 wives, and 44 widowers to 100 widows. In round thousands, the males over 5 years of age were engaged in the following occupations: 7 in professional, 2 domestic, 19 commercial, 12 agricultural, 21 industrial, and 31 were unproductive and unoccupied; the last figure is rather misleading as it includes at least four separate classes—children, aged, people of independent income, and incapables of all classes. The data in regard to foreigners is the most interesting for our purpose, as it gives an insight into the amount of mixture that is taking place. There were at the last census (1911) (31) 854 ♂ and 1,003 ♀ foreigners in the island. Of these 3 ♀ were English, the remainder were made up as follows: 77 ♂ and 45 ♀ from Africa (apart from 1 ♂ and 2 ♀, all these came from Egypt, Tripoli, Tunis and Algeria); 479 ♂ and 499 ♀ from Sicily; 156 ♂ and 253 ♀ from other parts of Italy; 36 ♂ and 39 ♀ came from Greece, and 11 ♂ were classified as Asiatics. This does not, of course, include the garrison, a large floating population of which the figures are uncertain, as they depend so much on the ships which happen to be in harbour at the time when the census is taken. The increase of population between 1828 and 1911 is of interest. That of Malta increased by 88·25 per cent. of the total, and that of Gozo by 45·31 per cent. The increase in Malta was nearly five times as great in the suburban area as in the other areas combined.¹

The density per square mile in 1911 was 1884 (Malta 2167, and Gozo 879). The density in the south-east corner of Malta is, however, greater than would appear from these figures. If the island be divided along a line west of Gargur, Naxaro, Musta, Notabile, Rabato, Crendi, the areas east and west of such a line would be almost equal in size. The eastern area, however, contained in 1911 183,132 inhabitants, and the western 5737. Practically all the Neolithic remains occur in the eastern area, suggesting that the centres of population have not changed appreciably since Neolithic times.

V.—MATERIAL AND METHODS.

The skeletal material examined is conveniently grouped in four series: (i) Bones from the Hypogæum at Hal Safieni (Malta Local Neolithic); (ii) Miscellaneous ancient skeletons, chiefly Romano-Maltese; (iii) Specimens from the Chapel of Bones (Late Mediæval); (iv) Modern bones. Only in case (ii) were any complete skeletons available.

¹ Since this article was written the results of the Census of 1921 have become available. They are as follows:—Malta, 189,697 (92,127 ♂, 97,570 ♀); Gozo, 22,561 (10,618 ♂, 11,943 ♀). Total for the two islands, 212,258, an increase of only 694 since 1911, as against 26,822 in the previous decade.

(i) The Hal Saffieni bones (whose antiquity we have already discussed) are in a very bad condition ; few long bones are complete. After sorting through several tons of fragments, measurements were taken on such bones as were sufficiently well preserved. A number of astragali were brought to England for more detailed examination later. The Hal Saffieni crania, which had previously been examined by Bradley, were re-measured.

(ii) There are in the Museum of Valletta and in the Roman villa at Notabile a small series of ancient skulls and some complete skeletons, most of which were excavated by Dr. Zammit. These can be exactly dated by archæological evidence, but are unfortunately too few to warrant the drawing of any definite conclusions.

(iii) The Chapel of Bones is a large, fantastically arranged ossuary. It is alleged to contain the bones of patients dying in the hospital of the Knights of St. John, and probably dates from the seventeenth and eighteenth centuries. There are several remarkable features about these bones, first the number of aged persons represented, suggesting generally the type of population which finds its way into the casual ward of a modern institution, secondly the almost entire absence of the female sex ; among 500 skulls selected at random, about 8 per cent. only were sexed as ? ♂, ? ♀, or ♀ ; these have not been included in the final count. It is, of course, quite possible that the number of female skulls is even less, but there was an orphanage attached to the hospital, and some children's bones were found in the ossuary, which may contain a few bones of nuns. The method of selection—for the number of bones is very great—was as follows : The skulls are arranged on shelves, and any skull without a basion was rejected, otherwise no selection was made ; long bones were picked out where the epiphyses were sufficiently well preserved for measurement. Unfortunately the person who arranged the ossuary mixed up all the bones, and wired the wrong mandibles on to the crania. Although, therefore, as a whole, the bones belong to the same series of persons, the association of particular long bones with each other, or of particular mandibles with skulls is impossible. The sexing was of the type that Professor Pearson terms “ anatomical sexing.” All the bones were removed to the Anatomical Department at Valletta, and measured there.

(iv) The modern bones are from an ossuary, and were set at my disposal by Dr. Busittel, who was kind enough to allow us to use a room in the Anatomy School at Valletta. As some of the bones were used for teaching purposes, it is possible that a slight selection has been made ; but enquiry into the method of obtaining the material inclines one to the belief that on the whole they are chance specimens, and a number of skulls were actually examined *in situ*. Sexing presented again considerable difficulty ; fortunately, however, in a number of cases they had not been properly macerated.

In measuring the living it was necessary to find such as would submit themselves to examination ; as far as possible, however, typical Maltese were taken. The

female children are from Valletta and Sliema Government Elementary Schools, the male from the Government Elementary School and the Lyceum at Valletta, and include some of the students at the University.

The adult males have been grouped as follows :—(1) Malta, (2) Gozo. The Malta group has then been subdivided into Urban Districts ; Rural Districts exclusive of Siggewe and Zurricco ; Siggewe ; Zurricco ; sufficient measurements having been taken at the two latter villages to make statistical treatment of value (Table II). The adult females have been divided into (1) Malta, (2) Gozo. Malta has then been subdivided into Urban and Rural Districts (Table III). Unfortunately, sufficient women were not measured at any one village to make further subdivision practicable.

The individuals measured include among the men representatives of all social classes ; among the women the lower social grades are chiefly represented. The men include professional men, gunners, militia, government messengers, men doing short sentences, paupers, and by far the largest class, "men in the street." The women include teachers, pupils at night schools, eighteen prisoners, patients in hospitals, paupers, and, again the largest class, any peasant woman who was not too frightened to be measured. All those who were either born of Maltese parents abroad, or although born in Malta are not of pure Maltese parentage, have been rejected. It is impossible in all cases to be quite certain, especially in the neighbourhood of Valletta. The measurements were taken in accordance with Martin's definitions (33) ; those on the femur follow Pearson (34). In working out the constants, the methods discussed in the *Anthropology of Cyprus* (37) have been followed. The limit of plotting selected has been such that the observations fall in from 15 to 20 groups. In head-lengths, for instance, this condition is fulfilled if the series be divided into 2 mm. groups. In order not to lengthen the report few comparative figures have been given.

For convenience of reference measurements have been referred to by their initial letters, which are given in brackets after each in the following list :—

A.—*Skulls.*

Ophryo-occipital length (O.O.L.).	Basi-alveolar length (B.A.L.).
Glabello-occipital length (G.O.L.).	Upper facial height (U.F.H.).
Greatest breadth (G.B.).	Facial breadth (F.B.).
Minimum frontal diameter (M.F.D.).	Orbital breadth (left) (O.B.L.).
Bizygomatic breadth (Biz.B.).	Orbital breadth (right) (O.B.R.).
Nasal height (N.H.).	Orbital height (left) (O.H.L.).
Nasal breadth (N.B.).	Orbital height (right) (O.H.R.).
Basi-bregmatic height (B.B.H.).	Palatal length (P.L.).
Basi-nasal length (B.N.L.).	Palatal breadth (P.B.).

B.—*Living.*

Glabello-occipital length (G.O.L.).	Upper facial height (U.F.H.).
Greatest head breadth (G.B.).	Total facial height (T.F.H.).
Minimum frontal diameter (M.F.D.).	Nasal height (N.H.).
Bizygomatic breadth (Biz.B.).	Nasal breadth (N.B.).
External orbital breadth (E.O.B.).	Internal ocular breadth (I.O.B.).
Bigonial breadth (Big.B.).	

The following indices were calculated on the living :—

Cephalic index (C.I.).	Total facial index (T.F.I.).
Upper facial index (U.F.I.).	Nasal index (N.I.).

On skulls, owing to the fact that it was impossible in the majority of cases to associate cranium and mandible, the total facial index was not calculated. The following additional indices were, however, worked out :—

Vertical index (V.I.).	Orbital index (left) (O.I.L.).
Mandibular index (M.I.).	Orbital index (right) (O.I.R.).

In a number of cases it was found necessary to work out the *significant difference* between two measurements. The method employed was described by the writer in a short paper on Cyprus, where it was shown that stress could be laid on the difference if it was greater than three times its own probable error. In order to avoid an excessive amount of figures, only significant differences have actually been tabulated. The symbols used are as follows: the Greek letter delta, Δ , signifies *difference*; epsilon, with a subscript delta, ϵ_{Δ} , means *error* of that difference. Measures, places and series are referred to by their initial letters, thus

$$\begin{array}{ccc} \Delta & & \epsilon_{\Delta} \\ \text{C-V} & & \\ \text{G.O.L.} & 1.93 \pm & 0.63 \end{array}$$

means that the difference in the glabello-occipital length between the Chapel of Bones and the Valletta crania is 1.93, with a probable error of 0.63. At a glance it is often difficult to tell whether such an error is significant; we have therefore tabulated the difference divided by its probable error, using at the head of the column the $\frac{\Delta}{\epsilon_{\Delta}}$ symbol. In the particular case referred to above $\frac{\Delta}{\epsilon_{\Delta}}$ is 3.06, and the difference is therefore significant. Owing to the necessity of preparing the data for publication in a comparatively short time, it has not been possible to work out as many correlations as might have been advantageous. A small number have, however, been worked out. Wherever it was possible to do so—that is to say, in the case of indices—the *coefficient of variation* method has been used, the formula employed

being, if $I = 100 A/B$ be an index, then a good approximation is arrived at by the formula

$$r = \frac{V_A^2 + V_B^2 - V_I^2}{2V_A V_B}.$$

To take an actual example, the correlation between the head length and the head breadth of the females from the urban districts is arrived at as follows:—The data are, Coefficient of variation, G.O.L. 3·44 and G.B. 3·78, and C.I. 4·05. The correlation will therefore be arrived at by adding $(3·44)^2$ to $(3·78)^2$, subtracting $(4·05)^2$ from the result, and dividing the whole by 3·44, multiplied by 3·78 multiplied by 2. The answer in this case is 0·3750.

The following measurements were made on the mandible:—

Coronoid height.	Breadth of ascending ramus, called for brevity
Condylar height.	ramus breadth.
Sigmoid height.	Condylar-symphysial length.
Symphysial height.	Bicondylar breadth.

In the Chapel of Bones measurements on the mandible were taken on both left and right sides, and the constants were worked out separately. In the case of the other fragments it was seldom possible to measure more than one side, and as the measurements in the Chapel of Bones showed how extremely close the dimensions on the two sides were, side has been disregarded elsewhere.

Only one index has been calculated, namely, the mandibular index, that is to say, condylar-symphysial length multiplied by 100 and divided by bicondylar breadth.

VI.—PHYSICAL ANTHROPOLOGY.

Before discussing in detail the cranial measurements, it may be convenient briefly to state the general dimensions of the crania. The means of skulls vary from 179 to 188 mm. in glabello-occipital length, and the means of the living males from 185 to 188 mm. The mean breadths vary from 133 to 141 mm. on the crania, and 150 to 152 mm. on the living adult male. The cranial capacity, estimated from the glabello-occipital breadth, the greatest breadth, and the basi-bregmatic height multiplied together, the product being multiplied by 0·0003849 + 96, varies from 1390·6 in the case of the Neolithic, to 1437·9 in the case of the Romano-Maltese, the Mediæval skulls show a capacity, by this formula, of 1405·5, and the modern 1393·7. It is unwise, probably, to lay any stress on these figures.

The cephalic index varies from 71·4, the mean of the Neolithic crania to 79·0, the mean of the modern crania and the vertical index from 71·2 in the case of the Neolithic crania, to 75·0, the vertical index of the Mediæval crania.

The variations in the general dimensions of the crania are sufficient to warrant a more detailed enquiry into the development of racial history in Malta. A complete

list of the measurements taken and, where the series is sufficiently large, of their variation, will be found in Appendix II, Table I. This should be read in conjunction with the following pages, from which, in order to make the general gist of the argument clearer, figures have, as far as possible, been eliminated.

The evidence which is so far available for the detailed history of man's development in Malta in early times is exceedingly scanty, and no ancient remains can be treated statistically. Such remarks as occur in the next few paragraphs can only be considered as tentative. The cranial measurements available seem to suggest that the head form of the Maltese has grown consistently shorter, both absolutely and relatively, since the Neolithic Age. The head breadth is remarkably consistent from Romano-Maltese times onwards. The skulls from Hal Safieni (Malta Local Neolithic), however, were extremely narrow, in great contrast to the modern crania. Living heads are 10 mm. longer than modern skulls among the males, in the females the difference is somewhat greater, but the modern series of female skulls is so very small that no reliance can be placed on it. Male heads are about 11 mm. broader than male skulls. The greater thickness of the scalp where the greatest head breadth is taken, may be accounted for by the influence of the temporal muscle.

The cephalic index appears to have increased continuously from the earliest times onwards, *pari passu* with the decrease in the glabello-occipital length. The index of the Romano-Maltese males is noticeably low, that of the females extremely high. This result is possibly due to the small numbers. There certainly seems to be a definite increase in the numerical value of the index from Mediæval times onward. The modern female crania are noticeably more brachycephalic than the modern male; indeed, there is a difference of 4 units, which closely parallels the difference between the Romano-Maltese male and female. This difference, although probably exaggerated by small numbers, appears to be based on some definite disparity. In Malta the living females are significantly more brachycephalic than the males. It is curious, however, that the Gozo males and females show no difference in their cephalic index. Probably in Gozo the male population is less disturbed than in Malta. The normal allowance of 2 units difference between the cephalic index of the living and the dead is borne out by comparing the modern Maltese heads and skulls.

The variations in head length and head breadth appear to be very similar in Mediæval and modern skulls, and equally as between crania and living people. Considerable stress should probably be laid on the fact that a large series of crania from a Late Mediæval ossuary (the Chapel of Bones) show practically the same degree of variation in their cephalic index as a chance collection from a modern ossuary, and as the modern inhabitants taken from all over the island.

The basi-nasal length appears to be consistently the same from Neolithic times onwards. This absence of change is of importance when we consider that the head length has undergone marked changes. It is probable, therefore, that the changes are taking place in the occipital region. A comparison of the contours of

the skulls suggests that the Maltese, for some reason, are developing a more plano-occipital or Armenoid type of skull than their ancestors possessed. This change is not accompanied by any great difference in the basi-bregmatic height. Although there is a difference of 2 mm. between the height of the Mediæval and modern skulls, as measured from the basion to the bregma, the very great variation of that measurement among the modern skulls makes it doubtful whether we can lay any stress on so small a difference. It is true that the vertical index shows certain changes, but they may be ascribed rather to the change in head length than to a difference in height. The measurement of the minimum frontal diameter adds further weight to our suggestion, that the changes which are taking place in Maltese skulls are confined to the occipital region, as there is no difference between this measurement in the earliest and in modern skulls. The ophryo-occipital length appears to be always about 2 mm. shorter than the glabello-occipital length, suggesting that few if any changes have taken place in the ophryonic region.

Passing to the consideration of the measurements associated with the masticatory apparatus, the bizygomatic breadth is extremely small in the Neolithic crania, but the numbers are very few. The Late Mediæval crania from the Chapel of Bones are significantly greater than the modern skulls in this measurement, and also in the basi-alveolar length, whereas the Romano-Maltese seem to approach more closely in both measurements to the Mediæval than to the modern crania. This may be due to a harder diet.

The upper facial height in the Hal Saffieni (Malta Local Neolithic) material is similar to that of the Romano-Maltese, but the Mediæval crania have a significantly greater measurement than the modern. The facial breadth is small in the Hal Saffieni material, but the Mediæval skulls are significantly broader in the face than the modern. The upper facial index is very close to the same figure from Neolithic times onwards, except for the small series of Romano-Maltese skulls, which have a lower index.

Some of the above measurements are probably more affected by the respiratory apparatus than by the action of the jaw, although it has been convenient to consider them in the above paragraph. The same is, to a certain extent, true of the palatal measurements, one of which, the breadth, is certainly intimately correlated with the breadth of the nose. The palatal breadth appears to have been very small in Neolithic times—smaller than can quite be accounted for by the smaller nasal breadth—and it is possible that a rather enfeebled masticatory apparatus may be the predominant factor in this particular case. Otherwise the palatal breadth has remained more or less constant. Certain changes appear to have taken place in the palatal length. In spite of the unusual smallness of the palatal breadth, the mean palatal length happens to be the greatest recorded. It is quite possible that this is an illusory figure. It is interesting to note, however, that the palates of Mediæval Maltese are significantly longer than those of their modern successors. This is.

quite possibly due to the same causes as are at work in the case of the bizygomatic breadth.

Turning to the respiratory apparatus proper, the nasal breadth of the Neolithic people is rather narrower than that of the Romano-Maltese, but only six Neolithic crania were available for measurement. The Mediæval crania have practically the same breadth of nose as the Romano-Maltese. The modern examples from Valletta, however, have a significantly narrower nose. The nasal height shows no appreciable difference. The nasal index shows considerable variation, accompanied, as usual, by a high coefficient of variation. Under these circumstances it is difficult to argue about the actual changes since early times. It is possible, however, that the nasal index was slightly greater in ancient than in modern times. It is clear from the figures that the nasal index of the Mediæval Maltese was significantly greater than it is at present. This point is of special interest because if, as has been argued, a number of persons from Western Europe were represented in the ossuary of the hospital, we should have expected to find a narrower nose, whereas in actual fact this is not the case.

The breadth of the orbits shows greater divergences than any other measurement. In the case of the left orbit the difference between the Mediæval and the modern bones is nearly seven times its probable error; in the right orbit it is over nine times its probable error. It is difficult to suppose that such a divergence should be without significance. It is not clear, however, what changes have taken place since Neolithic times, although the earlier orbits tend to be rather broader. There is no difference in the orbital height among the more recent bones, though the early bones seem to be not quite so high. The orbital indices are probably of great importance. The difference between the Neolithic and the modern indices amounts to eight units, the modern index being the greater. Parsons¹ has argued that a microsemic orbit is especially characteristic of Neolithic man, an outcome, as Thomson has shown, of powerful jaw development. In spite of the fewness of our numbers, the Neolithic material from Hal Saflieni indicates that Parsons' generalization is applicable to Malta, and that the introduction of a change to Armenoid characteristics has considerably affected the form of the orbit.

The difference between the left and right orbits is striking in our two larger series. In the case of the Mediæval bones the difference in the orbital breadth is .52 with a probable error of .085, a difference that is certainly significant. In the modern series the difference is actually greater, but owing to the smallness of the numbers the probable errors are too great to make this significant.

The comparative variation of the Mediæval and the modern crania is a matter of considerable importance. Unfortunately the number of earlier skulls is too few for statistical treatment, but the results of a comparison of modern crania with

¹ Professor Parsons has been good enough to discuss the matter with me personally.

those from the Mediæval hospital certainly suggest that those authorities who maintain that the hospital probably contained, amongst others, the bones of people from Western Europe are possibly in error. We should in that case have expected to find a high degree of variation. We do not do so. It may well be argued that the modern crania are too few to base any satisfactory arguments on, and we fully admit that it is unwise to argue from a series that never exceeds 42, and in some cases falls as low as 29. It would appear, however, that the modern series, of the majority of which the provenance was fairly exactly known, is consistently more variable than the Mediæval series from the Chapel of Bones. It would certainly be worth while to make a series of measurements on about 100 modern crania to see whether this statement really represents the truth.

Except in a few cases, it was impossible to associate mandibles with the crania to which they belonged, and unfortunately at the time when measurements were made on modern crania few mandibles could be discovered. The only series, therefore, of mandibles which could be treated statistically are those Mediæval specimen from the Chapel of Bones. Even in this case it was not found possible to get a series as large as 300 for every measurement. The majority of these, and probably all, are male; any doubtful cases having been rejected. The Neolithic and Romano-British mandibles are also probably male. The Bronze Age mandibles appeared from the associated bones to be female, but the condition of the latter was such that a definite opinion could not be expressed. In general terms there are certain marked differences between the mandibles from Hal Saflieni and elsewhere, whereas the Romano-Maltese and the Mediæval mandibles, although differing in detail, present a general similarity. The coronoid height and the condyloid height of the Neolithic mandibles are both lower, the ramus being of about the same breadth. The condylo-symphysial breadth is about the same. The Mediæval mandibles have a slightly lower ascending ramus than the Romano-Maltese, but the former are slightly more stoutly built; the mandibular index is quite possibly about the same. Generalizing, we may say that the Neolithic mandibles belong to a type with a rather short, broad ascending ramus, and a shallow sigmoid notch, whereas the Mediæval mandibles have the higher ascending ramus and the deeper sigmoid notch which are usually associated with various branches of the Alpine race.

A collection of teeth was made from the bone heaps at Hal Saflieni.¹ Unfortunately no teeth of more recent date are available. Out of a total of 224 adult teeth from Hal Saflieni (Malta Local Neolithic), 15 upper incisors and canines showed a marked edge-to-edge bite. Caries occurred in 19 cases; there was a complete erosion of the roots in 2. One incisor had two roots. Speaking generally, the teeth

¹ I am indebted to my brother, Mr. J. L. Dudley Buxton, for examining and reporting on these teeth from the point of view of a dental surgeon.

did not differ from a chance collection of modern civilized teeth, except that caries was less common.

TEETH FROM HYPOGÆUM, HAL SAFLIENI (MALTA LOCAL NEOLITHIC).

	1	2	3	4	5	6
	Normal Teeth.	Carious Teeth.	Teeth showing Marked Attrition of Edge- to-edge Form.	Teeth showing Marked Attrition.	Total Adult Teeth.	Deciduous Teeth.
Molars	21	10	—	18	48	3
Premolars	26	6	—	36	62	—
Canines	9	—	7	15	31	2
Upper incisors	23	1	8	23	54	—
Lower incisors	2	2	—	27	29	—
Total	81	19	15	119	224	5

Teeth included in Column 2 may also be included in Columns 3 or 4; Columns 3 and 4 are mutually exclusive.

Summing up, the general characters of the Maltese skulls at our disposal, the physical type conveniently termed "Malta first race" is associated culturally with the Malta Local Neolithic. Skulls of this type are long, narrow, and slightly built. They have low orbits, narrow zygomatic arches, and a jaw which, though often not absolutely large, has a low ascending ramus, a shallow sigmoid, and considerable breadth in the antero-posterior diameter. They appear to be representatives of the Mediterranean race.

The skulls of succeeding periods, conveniently termed "Malta second race," and associated with numerous cultural periods, are, as a general rule, shorter, broader, more stoutly built, larger, and have higher orbits. The ascending ramus of the jaw is high, and the antero-posterior diameter is small. Although among a large collection of these crania single specimens exhibit the characteristics of the Mediterranean type, and some even occur with features which are usually considered to be typical of the Nordic race, the majority, in addition to the features already mentioned, show that peculiar contour in the occipital region which is usually associated with the type called by Von Luschan "Armenoid."

Living Material.

Apart from those questions which have already been discussed when dealing with the general anthropology of Malta, special problems are connected with the living. In the first place, the sex and birthplace are definitely known, and the age, at least approximately. Secondly, the numbers are usually greater. Thirdly,

although the measurement of the long bones on the living was found to be impracticable, stature and sitting height could be measured. The purpose of this section is to study the living material intensively, with a view to finding out how far there are present differences within the islands.

In working out significant differences a comparison has been made between Malta and Gozo, between the urban and rural districts in Malta, between the urban districts and Siggewe, between the urban districts and Zurrigo, and between Siggewe and Zurrigo, in the case of the males, and between Malta and Gozo and the urban and rural districts in the case of the females. First the *means* have been compared; secondly, the *variations* from those means. In dealing with absolute measurements the *coefficient of variation* has been used, in the case of indices we have employed the *standard deviation*.

The stature throughout the whole archipelago appears to be very consistent. In both sexes the people from Gozo appear to be rather taller. The difference between the sexes amounts to rather under 15 cm.

The head measurements do not present any very striking differences. We have only tabulated those which are probably significant. Among the males there is a significant difference between Malta and Gozo in the following head measurements: Glabell-occipital length, minimum frontal diameter, external orbital breadth, bigonial breadth, and both nasal measurements, the Maltese being in every case larger. Between the urban and rural districts there is no difference except in the nasal height. Siggewe differs from the urban districts in six characters: minimum frontal diameter, bizygomatic breadth, bigonial breadth, total facial height, nasal breadth, internal ocular breadth. The differences between Zurrigo and the urban districts are of a different nature. Again there is no difference in glabell-occipital length, or external orbital breadth, but in this case there is no difference in minimum frontal diameter or bigonial breadth. All the other characters are significantly different, the urban population having in every case the larger dimensions. As a final test, Siggewe and Zurrigo were compared. Siggewe presented larger dimensions in every significant case, except minimum frontal diameter, which was significantly smaller, the other significant differences being in greatest breadth, external orbital breadth, and the nasal measurements. The significant differences in the case of the females appear in other characters. Between Malta and Gozo three measurements differ: bizygomatic breadth, external orbital breadth, and internal ocular breadth, but there are differences in upper facial height, nasal height, bizygomatic breadth, and external orbital breadth between the urban and rural districts.

There is very little difference in the variability. Among the males the minimum frontal diameter varies differently in the urban districts and in Zurrigo, and as between Siggewe and Zurrigo. The variability of the external orbital breadth is different in Malta and Gozo, and that of the upper facial height in the urban and rural districts. The total facial height differs in Malta and Gozo, and the nasal

height in the urban districts and Zurrigo. Among the females there is a significant difference between Malta and Gozo in greatest breadth, bigonial breadth and nasal height. There is no significant difference between the urban and rural districts. Between male and female, the males have a significantly greater bizygomatic breadth, the females significantly greater external orbital breadth, nasal height and cephalic index.

It is impossible to compare the absolute measurements of males and females. There is no significant difference in the total facial index between males and females, the other three indices are, however, significantly different, the females having the greater index in every case.

These differences are extremely difficult to correlate with actual facts. That the urban and rural population should resemble each other so closely is a striking feature, especially since we know that Valletta is, and has been, continually receiving additions, both from the outside world and from other parts of the island. In spite of this immigration, however, we do not appear to get an appreciably larger variation in the town than in the endogamous villages, if we take them *as a whole*. Contrasts arise, however, between the urban districts and individual villages. It may be suggested tentatively that the small local variations which appear to occur in the various villages tend to be swamped if we take all the villages together, as we can do artificially by pooling our measurements, and actually by measuring individuals from Valletta and the fortified suburbs, which have only existed for under four hundred years, that is to say about eleven generations, and have a population recruited from all over the island. This fact is all the more remarkable because, as we have shown, foreign blood has certainly been pouring into Valletta for a considerable period.

It may be argued that possibly the isolation in the island is not sufficiently complete, yet there is as much difference between the urban districts and the village of Zurrigo as there is between Malta and Gozo, although in different directions. The isolation of the villages, a social more than a geographical division, has proved as strong or as weak a frontier as the hazardous strip of water between the two islands.

The measurements on females throw little light on this point. There is a greater difference between the urban and rural district women than between those of Malta and Gozo; the latter series are unfortunately too few for more than a tentative inference. Social conditions cannot contribute much in the result, because whereas the women are comparatively stationary, apart from country and town marriages, there is considerable movement of the males.

Let us now consider the differences in the facial measurements. Professor Arthur Thomson (39) has suggested that the temperature and the humidity of the air have considerable effect on the form of the nose. The rainfall, at different stations at which observations are taken, differs to quite a large extent. For example, in

1919, 14·18 inches were recorded at Casal Lia, and 19·44 at Naxaro. Unfortunately no comparative humidity data are available, but such a striking difference in rainfall argues that the inhabitants of those two places breathe an atmosphere which differs at least appreciably in moisture. Again, local variations in temperature, if not great, may prove significant. At the same two stations the annual means of temperature for that year were, maximum 71·5, minimum 56·8, mean 64·1 at Casal Lia, and 69·9, 53·7 and 61·8 respectively at Naxaro, a big difference if the total area of the archipelago is taken into consideration.

The differences in the upper facial height may be, and probably are, associated partly with the respiratory (including as it does the nasal height) and partly with the masticatory apparatus, and the same is true of the total facial height, which includes both the two last-mentioned factors. It is interesting to note that differences in the total facial height are always associated with differences in the bizygomatic breadth; differences in the upper facial, with differences in the nasal height. The converse, though true in the former case, is not true in the latter. The differences in the bigonial breadth accompany differences in the minimum frontal diameter on the two occasions where they occur, but the excessive minimum frontal diameter at Zurrico is not associated with any irregularity of the bigonial breadth. The differences in the external orbital breadth do not appear to have any particular associations.

Although no doubt it is possible that these local differences may be largely due to heredity as opposed to environment, it would seem not unlikely that the present rather insignificant differences, taken as a whole, may be ascribed to small variations in climatic and economic conditions, to most of which the people have been subjected for many generations.

The differences between the sexes in head form is difficult to estimate. Obviously we cannot compare the absolute measurements, because the female is built on a different scale from the male, and to reduce them to similar proportions would be to abandon certain fundamental anatomical principles. There remain, however, a comparison of the variations and the indices. The former do not present great differences. The nasal height and the external orbital breadth of the female are appreciably more variable. The bizygomatic breadth of the male has a significantly wider dispersion. It is possible that in the latter case the greater muscular development of the male may account for this variation. The exact significance of the striking differences between the indices is not apparent.

Pigmentation.

Pigmentation figures bring out a certain contrast already suggested by measurements, and fail to confirm others. The figures are, however, rather unsatisfactory, and it was not found practicable to make more than three divisions in hair or eye

colour, without risk of considerable confusion, where work had necessarily to be done, sometimes under ideal conditions, sometimes in glaring sunlight, and sometimes in the not too well-lighted interior of a Maltese house. Both in hair and eye colour Zurrigo stands by itself. In that village one man in three has black hair, and two have brown. In the rest of Malta and Gozo the reverse is true. About 1 per cent. fair-haired people are found alike in Zurrigo and elsewhere. In Zurrigo two men out of three have brown eyes and there are slight odds in favour of the third man having hazel eyes rather than blue. In Siggew, where black hair is slightly less common than elsewhere, out of ten men, five tend to have brown eyes, four hazel, and one blue. Elsewhere in Malta blue eyes are about twice as common, that is to say out of ten men five have brown eyes, three hazel, and two blue. It is perhaps worth mentioning that the name Zurrigo, connected with the root *azrak*, means blue, and I was told that the village was so called because blue eyes were more common there than elsewhere.

In Gozo, although the hair colour does not differ materially from that of Malta, in round numbers, out of ten men seven have brown eyes, two hazel, and one blue.

In Malta the hair colour of the women does not differ to any great extent from that of the men, although fair-haired women appear to be slightly more uncommon. Brown eyes, however, seem to be much commoner, and hazel and blue eyes about half as common. With so small a series, however, it is possible that this result is merely illusory.

Comparative material from the Eastern Mediterranean shows very great discrepancy with these data, especially in relation to the number of blue eyes, which are nearly twice as common in Malta as they are in Cyprus, and more than three times as common as they are in Crete. The number of fair-haired persons in Malta is small, smaller even than in Cyprus, whereas generally speaking fair-haired people, though always remarkable and much admired, are not uncommon in Greek lands, not only among gods and goddesses, but even among the ordinary folk.

It would be interesting to correlate these differences in pigmentation with differences in climatic conditions. Up to the present, however, we have not succeeded in finding any generalization which would fit the figures, and the matter must remain *sub judice* until further data is available.

We have so far been dealing with hair colour and eye colour separately. By the use of Parsons' index (36) it is possible to take both into consideration. Parsons takes the percentage of dark brown and black hair, adds the percentage of dark eyes, and divides the result by two. This final result he terms his colour index. Where the eyes have been graded in three shades, *e.g.* blue, neutral, and brown, or some similar classification, he includes half the neutral group as well as the brown eyes under the heading dark. As our eye colour was graded in this way we have

followed the above procedure. Parsons' indices for our material will then be :—

						♂	♀
Urban Districts	..	..	..	..	..	67·4	72·3
Rural Districts	..	..	..	..	..	67·7	73·1
Siggewe	..	..	..	..	..	66·3	—
Zurricco..	..	..	..	..	..	54·2	—
Malta	..	..	..	..	..	67·5	74·9
Gozo	..	..	..	..	..	74·5	77·5

For comparative purposes we have worked out the Index of Pigmentation for some places in the Eastern Mediterranean. The values, which refer only to males, are as follows : Albania 53·3, Cyprus 55·8, Crete 78·0, Meligala 61·1, Mani 66·6.¹

Parsons, in dealing with the British Isles, draws attention to the following facts. First that the males show greater variation ; secondly that the females are darker than the males, in the British Isles the difference amounting to about 2 degrees ; and thirdly, that where the men are fairest the discrepancy between the two series is greatest, while where the men are very dark, the discrepancy is quite small. These conclusions are strikingly confirmed by our Mediterranean figures. We have not included any very small series from Malta, and, therefore, we do not get some of the irregularities which Parsons attributes to small numbers.

The difference between Zurricco and the rest of Malta is very striking. It will be noticed that it is even greater than that between Malta and Gozo, and shows the Zurricco men to be markedly fairer, with the comparatively low index of 54·2. The urban districts, rural districts, and Siggewe all have an index that does not differ by more than the probable error. Gozo, both among the males and the females, has a higher index, *i.e.* a greater percentage of "darkness." The exact significance of these figures is at the present stage of our understanding of pigmentation in the Mediterranean area not easy to unravel. If we take comparative data it will be seen that the Cretans are considerably darker. This may be reasonably interpreted as suggesting a higher percentage of Mediterranean admixture. The Albanians appear to belong to a very different racial stock. As far as measurements go there is, on the whole, not very much resemblance between the people of Zurricco and those of Cyprus, although the appearance of both would suggest that they belong to the same racial stock. The resemblance between the Maniots and the Maltese, as far as pigmentation index is concerned, is very striking. When other measurements are considered, some resemblances appear, but there are certain very great differences. The Maltese and the Maniots are closely alike, not only in the proportions of the cranium, as represented by the cephalic index, but also in the absolute measurements of head length and head breadth. The facial and nasal measurements are, however,

¹ For absolute values see p. 105 of reference 38.

extremely different, due possibly to differences in environmental conditions or dietary habits.¹

Pigmentation figures, then, seem to support a conclusion which had already been arrived at on other grounds, namely, the relationship between the Maltese and the mixed Armenoid population of the Eastern Mediterranean.

Coefficients of Correlation.

The coefficients of correlation which have been worked out refer only to those figures which are utilized for indices. Unfortunately some of the series are too small for this treatment. For the most part the coefficients of correlation do not suggest, in the four series of characters which were selected, any great differences. There is a significant difference between the correlation of the total facial height and the bizygomatic breadth in the male and female, a condition which is probably due to the more developed masticatory apparatus of the male. The difference between the correlations of head length and head breadth between the urban districts and Siggewe is of interest when we compare the means and the coefficients of variation of those measurements absolutely, and confirms to a certain extent our hypothesis that Siggewe possibly represents a local deviation from the normal Maltese type. Differences between the urban district females and the rural district females are found in four characters (total facial height, bizygomatic breadth, nasal height and nasal breadth) suggesting conditions one of which can be referred to food and the other to climate, but the absence of confirmatory evidence in the males makes it necessary to withhold any conclusions until further correlations have been worked out.

Looking at the figures generally, the correlated characters show remarkably little correlation, and the absence of real differences between the various groups goes far to suggest that the differences between the various parts of the archipelago are not in any way of fundamental importance.

The coefficients of correlation on the skulls are unsatisfactory, owing to the paucity of material. The extremely small correlation between glabello-occipital length and greatest breadth from the Chapel of Bones is of an unusual character. It can hardly be illusory when worked out on so large a series, but the explanation is not apparent from our present data.

VII.—RACIAL PROBLEMS.

The racial problems connected with Malta are extremely difficult to deal with, because they raise certain social questions. Historically the matter may be summarized briefly as follows.

¹ Both Meligala and Mani are situated in the Peloponnese.

The megalith builders, who may be conveniently termed "Malta first race" (culturally "Local Neolithic"), are certainly akin to the early, and, indeed, present inhabitants of North Africa and to those of Sicily, Corsica, Sardinia, and Spain, and belong to what is usually known as the Mediterranean race, differing from many skulls of this type in having a shorter nasal aperture, and therefore a bigger nasal index.

The inhabitants of the Barbary coast have been discussed at great length by Bertholon and Chantre (41). A series of 124 skulls (unfortunately the sexes have been mixed) from Carthage, dating from the sixth to the third century, B.C., shows a close resemblance to the "Neolithic" skulls found in the Hypogæum at Hal Saflieni. The low standard deviations, even when the sexes are mixed, *e.g.* cephalic index, mean 74.73 and $2.94 \sigma^1$ suggest the absence of any Armenoid blood in Carthage, and a small series (35) of modern crania ($\sigma + \varphi$) from Tunis show almost identical figures (*e.g.* cephalic index mean 74.31 and 2.96σ).

In Sicily from Eneolithic times onward the population is of the same type. Even in a series of two hundred modern Sicilian skulls, Giuffrida Ruggeri found only 5 σ and 2 φ of the Eurasiatic form, one was doubtful. Apart from the small series from Anghelu Reju, the modern inhabitants of Sardinia and Corsica appear to belong to this type (46).

It is remarkable that wherever we find Mediterranean man he shows little variation, suggesting a primitive stock which has maintained itself in certain areas.

The "Neolithic" Maltese (Malta first race) can have differed but little from our own Neolithic ancestors, except in the form of the nasal aperture. The modern people differ from the modern British type in head form, in stature, and in the general build of the skeleton. It would seem as though these differences were of essential importance. The Maltese appear to be a mixture of a people who certainly form a part of the population of the British Isles, but there is a second element that is not akin. It is noticeable that, as would appear from recent work, the Neolithic element seems not to have been entirely swamped in the British Isles; on the other hand we have shown that in spite of continuous influx of Mediterranean blood, it has not been able to dominate the population in Malta. Possibly the geographical conditions of the island are particularly favourable to the continuance of the race which has since developed.

These megalith builders are succeeded by a different type of folk, exhibiting Armenoid characteristics (Malta second race). The most interesting question of Maltese anthropology is, where did these late arrivals come from, and when did they come to Malta. Early skulls are unfortunately missing at present in the Mediterranean area. The immigrants are not racially allied to the people of Italy, Sicily, or the Barbary coast; they differ fundamentally from what appears to be the type

¹ σ is used throughout this paper as a symbol for "standard deviation."

in Albania ; they resemble some of the elements in the early population of Cyprus, but the closest parallel appears to be Crete, some parts of Greece, and the Islands of the Sea. Such evidence as we have suggests an immigration from the eastern part of the Mediterranean. We have already argued elsewhere (38, p. 92) that even early in the Bronze Age there existed in the Eastern Mediterranean a mixed stock consisting of elements of Armenoid and Mediterranean man, and suggested that such mixing possibly took place as early as the end of the Neolithic period. It seems possible that these people arrived in Malta at a much later date. Unfortunately the gap is a long one. Plenty of Neolithic material has survived, we have a few scattered finds in the long intervening periods, and a small and scarcely adequate number of crania of the Romano-Maltese time.

We have argued above that the Malta second race cannot have come from anywhere but the Eastern Mediterranean, and that they show no affinities with the Carthaginians. We have at present, however, no satisfactory cranial evidence from Carthage earlier than the sixth century B.C. We know, on the other hand, that Carthage was closely connected in earlier times with the great trading cities of the Syrian coast. The conditions in Malta and North Africa are extremely different, and whereas it might be impossible for people of Armenoid type to establish themselves on the coast of North Africa, this argument would not affect the possible establishment of the same type in a comparatively isolated island. We know, further, that a people of undoubtedly Syrian origin, namely the Jews, have, in Tripoli, to a large extent, lost their typical head form, while retaining their religious, social, and, it would appear, at least some of their physical characteristics. It is possible, therefore, that the origin of the Malta second race must be looked for in Phœnician traders of Armenoid origin, who may have come either directly from the Eastern Mediterranean or indirectly via Carthage.

There can be little doubt that such a change must have taken place at a comparatively late date in the history of Malta, but it would seem extraordinary that an invasion of any such race could have entirely altered the population of an island. We have at present no evidence to show how the change was affected. It may have extended over some generations, but in that case we should have expected to find an intermediate stage between Malta first and second races. Our present evidence, however, does not, unfortunately, cover that transitional period. It is possible that such a period may be discovered. On the other hand we have the possibility of the new influx of people exterminating, or nearly exterminating, the previous inhabitants, an event which is not without parallel in modern times. In North Africa the problem is somewhat different. Here the Armenoid peoples can only have represented a comparatively small element in the whole population, and we know that there are certain brachycephalic elements surviving till to-day. Again, the inhumation burials in Carthage which have as yet been explored are so few, and show so little variation in cranial form, that they may quite well belong to

some definite section of the population. On the one hand we have on the mainland a series of settlers among a large indigenous population, and on the other hand we have a further band of settlers, on a small island, on which it is quite possible events occurred which would have been impossible amidst a large population.

We have not at present sufficient statistical material in early times to enable us to judge how far there has been a change in the standard deviations since the coming of the second race, which would enable us to say whether there ever was a time in Malta when a considerable mixing of races was taking place; and it must always be remembered that the second race may have been, at least in origin, considerably intermixed with Mediterranean blood before they ever ventured as far as Malta.

It cannot be denied that the second race has altered since its arrival in Malta; but just as in most parts of the Mediterranean, even at comparatively short distances apart, we find local divergences, it would hardly be surprising that we should also find differences in the time series, namely, that people of one age should show a slight physical difference from those of the other. The internal differences, however, in Malta appear to be but insignificant when compared with the differences between the Maltese and the other inhabitants of the Mediterranean, and it seems justifiable—at least for purposes of intensive study—to regard them as a Maltese sub-race.

Summing up their characters, they are distinctly long-headed, though hardly so long-headed as the Cretans, but nearly 10 mm. longer than the Cypriots; they are broad-headed, having about the same head breadth as the Cretans, and a greater breadth than the Cypriots. The change since ancient times has operated both in shortening the length and increasing the breadth, the height of the cranium having remained constant. The face is much broader than in ancient times; the orbits are higher and narrower; the nose longer and broader, so that the nasal index is not appreciably altered.

The Mediæval skulls in the Chapel of Bones presented characteristics similar to those of the skulls in the modern ossuaries. Although some variation occurred, as might be expected in a series which might contain a number of foreigners, the standard deviations are sufficiently small to suggest that on the whole the skulls are those of adult males of a normal population. The standard deviations are, indeed, smaller than those of the series from the modern ossuary. Both series, from the Mediæval Chapel of Bones, and from the modern ossuary, are large in size—that is to say, absolutely long, high, and broad; in the majority, the brow ridges are very well developed, and there are other indications of considerable muscularity. It is possible that some of the skulls, on the sex of which it was not possible to express an opinion, may be males of Mediterranean origin, as these latter appear as a general rule to be smaller. A few appeared to be Negroid.

Although skulls which presented Negroid characters were not uncommon from Saracenic—possibly earlier, and certainly later—graves, the Negro element in the

population does not appear to be very great. Slaves were, we know, introduced in large numbers by the Knights of St. John, and a fine old building still remains in Valletta as a witness to the number of Negroes kept in captivity, but yet there appears to have been great segregation. The Turk in Cyprus seems to have been more merciful to his slaves than the Christian in Malta, possibly because of the difference in the social systems. It is doubtful, therefore, whether the Negro element is more than a negligible factor in Maltese ethnology.

Cases certainly occur, in all periods, of extremely long skulls of the hypsistenocephalic type of Giuffrida Ruggeri. Some of these specimens appeared on a careful examination to present Negroid characters; the majority seemed to be well within the range of normal variation of the ordinary Mediterranean type. If mixing with Alpines immediately raises the standard deviation of Mediterranean man, it is to be expected that a mixture with Negro or Proto-Ethiopic would have the same effect; without definitely denying the possibility of this type in Malta, it would seem a more reasonable hypothesis to suggest that those crania which present a combination of the characters of a long head with considerable prognathism and a wide nasal aperture probably belonged either to actually imported Negroes or to their descendants.

Although the census figures show a different result, it is of interest to note that among the people who presented themselves for measurement in villages or institutions, practically all the foreigners came from the Barbary coast.

There can be little doubt that there has been considerable Italian influence in the island for a long period, and we have already shown that at the present day the largest resident foreign element apart from the garrison is Italian. It seems possible that the same influences, whatever they were, which made it possible for the early population to be swamped by the present type, have also made the latter immigrants, of a type similar to the Neolithic people, unable to stand against the domination of the sub-race (Malta second race) now established in the island.

A question of considerable importance from the practical point of view is whether there is any essential difference between the Maltese and the nations of Western Europe, who, either singly or collectively, have occupied the island since the Middle Ages. Social distinctions have operated during the whole time, but there is evidence to suggest that the Knights may have considerably affected the population, especially that of Valletta. Some of the people of Rhodes, who followed the fortunes of the Knights when the latter were driven from the Eastern Mediterranean, settled in Malta. Mercenaries were employed by the Order, and in some cases never returned home. In later times also, the Knights' vows of chastity, never very strictly adhered to, were entirely neglected, and their illegitimate children, whose fathers were predominantly French, contributed a considerable element to the population (28, p. 46). It is probably to such influences that we owe those crania in the Chapel of Bones which appear to show Nordic affinities.

The stay of the French in the island was too short to have any effect on the population. A social barrier has been built up between the British and the people of the land, and the general impression gained is that, though there are a certain number of mixed marriages, there cannot, even after three generations of a large, if floating, British element in Valletta, be more than a very thin British strain in the population.

We have shown, in dealing with the history of the island, how extremely difficult it is to account for the wholesale immigration of an Armenoid-like population at any period. We have also shown how, in spite of the continual immigration of people of the Mediterranean stock, the Maltese type (*i.e.* Malta second race, displaying Armenoid characters) appears to have persisted for a long period. It would seem, therefore, a point worthy of further consideration, whether the development of the Maltese along the lines they appear to have followed may not be due to certain definite geographical factors of whose influence we are as yet unaware. It is possible that if we had at our disposal a long unbroken series, instead of larger or smaller series from Neolithic, Mediæval, and modern ossuaries, we should not find such striking contrasts as we do at present. Anthropological data from various parts of the Mediterranean show that there is very often a significant difference between two villages in different valleys of the same mountain range. It is possible that even the few generations which have elapsed between the building of Hal Tarxien and 1921 may be the equivalent, in time, of such a journey in space, and certain big changes may have taken place owing to changing geographical conditions. There can be little doubt that the climate of Malta has changed very much, not only since the first terrace was cut in the Weid Dalam, but even since the formation of the second terrace. We have also suggested that the evidence from Professor Zammit's excavations at Hal Tarxien hints at a change in climate since Neolithic times. The change in the structure of the population may be due, therefore, partly to geographical as well as to historical causes.

Whether or no the development of the Maltese sub-race is due to particular geographical conditions, there can be little doubt that, in Malta at least, the strain is biologically remarkably successful and extremely fertile. In spite of the high infant mortality which has existed in the past, they have continued to increase, and the modern developments of hygiene and the care of infants are likely to make the increase still more rapid. If the overcrowding continues, in a comparatively short time we shall be faced with conditions in the island which would appear to be, biologically speaking, unsatisfactory. Sanitary conditions can be improved, food can be imported, but excessive overcrowding may bring its own remedy, either in disease or in a diminished fertility. The present fertility is quite possibly due to some underlying climatic condition. In spite of lack of water, Malta has long been extremely fertile botanically, and was famed for this in classical times. The Maltese goats, by far the most abundant large mammal of the island apart from

man, are also unusually fertile, and the females possess remarkably developed udders. Possibly similar causes make both man and the goats fertile. If this is so, emigrants from the island will probably, after a short time, lose their fertility,¹ whilst the only limiting factors on the island itself will be space and the food and water supply.

Summarizing our general conclusions, the race in Malta which is associated with the period of great megalithic buildings—a cultural stage we have termed “Malta Local Neolithic”—appears to be closely akin to the Mediterranean race. This is our “Malta first race.” At a later date, possibly towards the end of the Bronze Age, but more probably during the Early Iron Age, Malta was peopled by a race with different characteristics, our “Malta second race.” These people are of Armenoid type, but probably have an admixture of Mediterranean blood. Their origin appears to be the Eastern Mediterranean. They may have come to Malta either directly or by way of Carthage. They may have destroyed the previous inhabitants, or they may merely have pursued methods of peaceful penetration. This race has firmly established itself in Malta, and all subsequent introduction of foreign blood has failed to raise the variation. During the course of years certain changes have taken place; there are also certain local variations, but the differences between Malta and Gozo are not greater than the differences between the general population of Malta and at least one, and possibly more, of the more isolated villages.

APPENDIX I.

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¹ Of interest in this connection is the fact that there is at present a Maltese colony in Detroit, U.S.A., and it will be instructive to observe whether, amid alien surroundings, the strain is able to perpetuate itself and to retain its fertility.

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APPENDIX II.

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TABLE I.—SKULL MEASUREMENTS.

Malta Local Neolithic, Hypogæum, Hal Safieni.				Romano-Maltese.				Mediæval, Chapel of Bones.			
♂				♂				♂			
Character.	No.	Mean.		No.	Mean.			No.	Mean.	σ	V.
O.O.L.	9	186.38	...	18	183.33	4	172.97	466	178.20 \pm 0.20	6.39 \pm 0.14	3.59 \pm 0.08
G.O.L.	9	188.34	...	18	186.08	4	173.25	467	180.54 \pm 0.20	6.34 \pm 0.14	3.51 \pm 0.11
G.B. ...	10	133.45	...	18	139.53	5	139.80	468	139.04 \pm 0.15	4.77 \pm 0.11	3.43 \pm 0.07
M.F.D.	9	97.06	...	18	96.14	5	94.00	467	96.56 \pm 0.16	5.00 \pm 0.11	5.18 \pm 0.11
Biz.B. ...	4	118.00	...	6	131.50	—	—	263	132.28 \pm 0.18	4.28 \pm 0.13	3.24 \pm 0.10
N.H. ...	7	49.29	...	18	50.78	4	46.50	461	52.08 \pm 0.08	2.51 \pm 0.06	4.82 \pm 0.11
N.B. ...	6	22.50	...	17	24.44	4	23.25	452	24.37 \pm 0.06	1.93 \pm 0.04	7.92 \pm 0.18
B.B.H.	4	133.87	...	18	134.31	1	130.00	461	135.62 \pm 0.16	4.97 \pm 0.11	3.66 \pm 0.08
B.N.L. ...	4	101.37	...	18	99.72	2	94.00	459	101.13 \pm 0.13	3.99 \pm 0.09	3.95 \pm 0.09
B.A.L.	4	95.12	...	17	95.30	—	—	392	96.27 \pm 0.15	4.42 \pm 0.11	4.59 \pm 0.11
U.F.H.	6	65.09	...	18	65.11	2	67.00	437	68.10 \pm 0.14	4.38 \pm 0.10	6.43 \pm 0.15
F.B. ...	6	86.67	...	11	92.81	3	91.00	420	94.62 \pm 0.18	5.51 \pm 0.13	5.82 \pm 0.14
O.B.L.	6	41.83	...	16	39.59	4	37.50	449	40.65 \pm 0.06	2.03 \pm 0.05	4.99 \pm 0.11
O.B.R.	6	41.25	...	15	39.80	3	36.77	458	41.17 \pm 0.06	2.05 \pm 0.05	4.98 \pm 0.11
O.H.L.	6	31.58	...	15	33.20	4	32.12	451	33.56 \pm 0.07	2.10 \pm 0.05	6.26 \pm 0.14
O.H.R.	6	31.67	...	14	32.85	3	30.38	456	33.34 \pm 0.07	2.12 \pm 0.05	6.36 \pm 0.14
P.L. ...	7	50.63	...	18	50.19	4	43.00	443	49.36 \pm 0.11	3.51 \pm 0.08	7.11 \pm 0.16
P.B. ...	8	32.25	...	16	36.75	3	34.66	447	36.19 \pm 0.10	3.14 \pm 0.07	8.66 \pm 0.20
C.L. ...	9	71.44	...	17	75.29	4	80.75	463	77.09 \pm 0.11	3.63 \pm 0.08	4.71 \pm 0.10
V.I. ...	4	71.24	...	16	72.25	—	—	461	75.17 \pm 0.11	3.52 \pm 0.08	4.68 \pm 0.09
U.F.I. ...	4	52.00	...	9	48.44	—	—	247	51.83 \pm 0.15	3.45 \pm 0.10	6.65 \pm 0.20
O.I.L. ...	6	76.00	...	15	83.67	—	—	451	82.27 \pm 0.19	5.95 \pm 0.13	7.23 \pm 0.16
O.I.R.	6	76.92	...	12	84.33	—	—	462	81.10 \pm 0.19	6.04 \pm 0.13	7.45 \pm 0.17
N.I. ...	6	47.17	...	17	48.18	4	50.25	448	46.94 \pm 0.13	4.14 \pm 0.09	8.82 \pm 0.20

TABLE I.—SKULL MEASUREMENTS—*continued.*

Malta Local Neolithic, Hypogæum, Hal Saflieni.				Bronze Age.		Romano-Maltese.		Mediaeval, Chapel of Bones.			
δ				δ		$\delta + \text{♀}$		δ			
Character.				No.	Mean.	No.	Mean.	No.	Mean.	σ	V.
Cor.H.L.	...	...	...	11	59.32	2	54.50	7	69.00	67.19 \pm 0.23	8.85 \pm 0.24
Cor.H.R.	...	...	...	...	...	3	41.17	13	55.00	67.41 \pm 0.22	8.68 \pm 0.23
Con.H.L.	...	...	...	11	49.55	3	41.17	13	55.00	60.15 \pm 0.27	11.72 \pm 0.32
Con.H.R.	...	...	...	...	...	3	36.83	10	47.75	60.99 \pm 0.29	12.35 \pm 0.34
Sig.H.L.	...	...	...	13	42.65	3	36.83	10	47.75	49.51 \pm 0.21	11.35 \pm 0.30
Sig.H.R.	...	...	...	...	...	5	28.10	11	30.09	50.31 \pm 0.20	10.81 \pm 0.28
Symph.H.	...	...	...	7	30.07	3	34.00	11	30.09	3.74 \pm 0.10	12.34 \pm 0.33
Ramus R.	...	...	...	...	...	3	34.00	9	101.44	33.96 \pm 0.11	8.95 \pm 0.23
Ramus L.	...	...	...	16	34.57	—	—	7	93.93	33.73 \pm 0.11	9.20 \pm 0.24
Con.-Syn.L.	...	...	...	2	103.75	—	—	3	115.83	105.35 \pm 0.24	6.18 \pm 0.16
Bigon.B.	...	...	...	—	—	—	—	284	—	—	—
Bicond.B.	...	...	...	—	—	—	—	284	118.31 \pm 0.28	6.99 \pm 0.20	5.92 \pm 0.17
M.I. ...	...	...	...	—	—	—	—	283	88.96 \pm 0.28	6.91 \pm 0.20	7.76 \pm 0.22

TABLE I.—SKULL MEASUREMENTS—*continued.*

Valletta Modern. ♂					Valletta Modern. ♀	
Character.	No.	Mean.	σ	V.	No.	Mean.
O.O.L. ...	30	176.43 \pm 0.72	5.84 \pm 0.51	3.31 \pm 0.28	9	164.00
G.O.L. ...	41	178.61 \pm 0.57	5.39 \pm 0.40	3.02 \pm 0.23	12	166.54
G.B. ...	42	141.42 \pm 0.60	5.79 \pm 0.43	4.10 \pm 0.30	12	137.63
M.F.D. ...	42	96.76 \pm 0.50	4.84 \pm 0.36	5.00 \pm 0.37	12	92.92
Biz.B. ...	38	130.22 \pm 0.54	4.90 \pm 0.38	3.76 \pm 0.29	11	124.41
N.H. ...	42	51.68 \pm 0.38	3.62 \pm 0.27	7.00 \pm 0.52	11	48.14
N.B. ...	42	23.50 \pm 0.17	1.63 \pm 0.12	6.94 \pm 0.51	11	24.82
B.B.H. ...	41	133.50 \pm 0.65	6.17 \pm 0.46	4.63 \pm 0.35	12	124.42
B.N.L. ...	41	100.02 \pm 0.60	5.70 \pm 0.42	5.70 \pm 0.43	12	94.42
B.A.L. ...	41	94.59 \pm 0.52	4.92 \pm 0.37	5.20 \pm 0.39	11	89.68
U.F.H. ...	42	66.58 \pm 0.43	4.16 \pm 0.31	6.24 \pm 0.46	12	60.17
F.B. ...	41	92.74 \pm 0.49	4.61 \pm 0.34	4.97 \pm 0.37	12	89.75
O.B.L. ...	31	39.13 \pm 0.21	1.75 \pm 0.15	4.46 \pm 0.38	8	38.66
O.B.R. ...	29	38.47 \pm 0.28	2.26 \pm 0.20	5.88 \pm 0.52	8	38.06
O.H.L. ...	31	32.66 \pm 0.39	3.20 \pm 0.27	9.81 \pm 0.85	8	35.25
O.H.R. ...	30	32.42 \pm 0.37	3.04 \pm 0.26	9.38 \pm 0.82	8	33.25
P.L. ...	30	48.03 \pm 0.42	3.45 \pm 0.30	7.19 \pm 0.63	8	45.50
P.B. ...	30	35.23 \pm 0.33	2.67 \pm 0.23	7.59 \pm 0.66	6	37.68
C.I. ...	41	79.01 \pm 0.39	3.67 \pm 0.27	4.64 \pm 0.35	12	82.71
V.I. ...	40	74.55 \pm 0.36	3.36 \pm 0.25	4.51 \pm 0.34	12	75.08
U.F.I. ...	38	50.92 \pm 0.38	3.43 \pm 0.27	6.74 \pm 0.52	11	48.55
O.I.L. ...	31	83.89 \pm 0.75	7.52 \pm 0.64	8.96 \pm 0.77	8	91.25
O.I.R. ...	29	85.01 \pm 0.98	7.82 \pm 0.69	9.20 \pm 0.82	8	88.75
N.I. ...	42	45.62 \pm 0.38	3.67 \pm 0.27	8.05 \pm 0.60	11	51.64
Cor.H.L. ...	—	—	—	—	—	—
Cor.H.R. ...	—	—	—	—	—	—
Con.H.L. ...	—	—	—	—	—	—
Con.H.R. ...	—	—	—	—	—	—
Sig.H.L. ...	—	—	—	—	—	—
Sig.H.R. ...	—	—	—	—	—	—
Symph.H. ...	—	—	—	—	—	—
Ramus R. ...	—	—	—	—	—	—
Ramus L. ...	—	—	—	—	—	—
Con.-Sym.L. ...	—	—	—	—	—	—
Bigon.B. ...	—	—	—	—	—	—
Bicond.B. ...	—	—	—	—	—	—
M.I. ...	—	—	—	—	—	—

TABLE II.—ADULT ♂.

Malta.					Gozo.				
Character.	No.	Mean.	σ	V.	No.	Mean.	σ	V.	
Stature ...	483	1651.18 \pm 1.93	62.96 \pm 1.37	3.81 \pm 0.08	56	1657.86 \pm 6.91	76.68 \pm 4.89	4.63 \pm 0.30	
Sit.Ht. ...	342	869.43 \pm 1.40	38.48 \pm 1.00	4.43 \pm 0.11	53	869.05 \pm 3.66	39.48 \pm 2.59	4.54 \pm 0.30	
G.O.L. ...	561	188.70 \pm 0.19	6.63 \pm 0.13	3.51 \pm 0.07	82	185.38 \pm 0.49	6.55 \pm 0.34	3.53 \pm 0.19	
G.H.B. ...	562	152.29 \pm 0.17	5.80 \pm 0.12	3.81 \pm 0.08	82	151.79 \pm 0.44	5.91 \pm 0.31	3.89 \pm 0.21	
M.F.D. ...	561	110.23 \pm 0.16	5.66 \pm 0.11	5.13 \pm 0.10	82	108.18 \pm 0.48	6.46 \pm 0.34	5.97 \pm 0.32	
Biz.B. ...	560	139.14 \pm 0.17	5.95 \pm 0.12	4.28 \pm 0.09	82	139.11 \pm 0.46	6.12 \pm 0.32	4.40 \pm 0.23	
Ext.Orb.B.	560	100.01 \pm 0.15	5.42 \pm 0.11	5.42 \pm 0.11	82	96.91 \pm 0.49	6.59 \pm 0.35	6.80 \pm 0.36	
Big.B. ...	562	109.31 \pm 0.19	6.53 \pm 0.13	5.98 \pm 0.12	82	107.21 \pm 0.49	6.62 \pm 0.35	6.17 \pm 0.33	
U.F.H. ...	555	64.82 \pm 0.14	4.80 \pm 0.10	7.41 \pm 0.15	82	64.04 \pm 0.35	4.66 \pm 0.25	7.28 \pm 0.37	
T.F.H. ...	554	115.98 \pm 0.21	7.40 \pm 0.15	6.38 \pm 0.13	77	114.94 \pm 0.43	5.60 \pm 0.30	4.87 \pm 0.29	
N.H. ...	560	48.79 \pm 0.12	4.32 \pm 0.09	8.85 \pm 0.18	83	50.86 \pm 0.36	4.83 \pm 0.25	9.50 \pm 0.50	
N.B. ...	560	36.28 \pm 0.09	3.24 \pm 0.07	8.93 \pm 0.18	83	37.05 \pm 0.24	3.23 \pm 0.17	8.72 \pm 0.46	
Int.Oc.B.	559	32.33 \pm 0.09	3.15 \pm 0.06	9.73 \pm 0.20	—	—	—	—	
C.I. ...	561	80.71 \pm 0.10	3.44 \pm 0.07	4.26 \pm 0.09	81	82.00 \pm 0.25	3.33 \pm 0.18	4.06 \pm 0.22	
U.F.I. ...	554	46.59 \pm 0.11	3.75 \pm 0.08	8.04 \pm 0.16	81	46.07 \pm 0.23	3.01 \pm 0.16	6.53 \pm 0.35	
T.F.I. ...	552	83.52 \pm 0.15	5.38 \pm 0.11	6.44 \pm 0.13	76	82.54 \pm 0.35	4.58 \pm 0.25	5.55 \pm 0.30	
N.I. ...	559	75.26 \pm 0.25	8.89 \pm 0.18	11.81 \pm 0.24	83	73.45 \pm 0.62	8.48 \pm 0.44	11.55 \pm 0.61	

TABLE II.—ADULT ♂—*continued.*

Urban Districts.					Rural Districts.			
Character.	No.	Mean.	σ	V.	No.	Mean.	σ	V.
Stature ...	175	1647.77 \pm 3.59	70.40 \pm 2.54	4.27 \pm 0.15	151	1647.75 \pm 3.65	66.50 \pm 2.58	4.04 \pm 0.16
Sit. Ht. ...	166	867.80 \pm 2.13	40.72 \pm 1.51	4.69 \pm 0.17	122	877.91 \pm 2.22	36.40 \pm 1.57	4.15 \pm 0.18
G.O.L. ...	237	188.86 \pm 0.29	6.60 \pm 0.20	3.49 \pm 0.11	157	188.30 \pm 0.36	6.68 \pm 0.25	3.55 \pm 0.14
G.H.B. ...	238	152.92 \pm 0.23	5.23 \pm 0.16	3.42 \pm 0.11	157	152.63 \pm 0.32	6.01 \pm 0.23	3.93 \pm 0.15
M.F.D. ...	238	110.77 \pm 0.24	5.47 \pm 0.17	4.94 \pm 0.15	156	110.91 \pm 0.33	6.15 \pm 0.24	5.55 \pm 0.21
Biz.B. ...	236	139.53 \pm 0.25	5.77 \pm 0.18	4.14 \pm 0.13	157	139.97 \pm 0.32	5.94 \pm 0.23	4.24 \pm 0.16
Ext.O ² b.B.	236	99.87 \pm 0.23	5.18 \pm 0.16	5.18 \pm 0.16	157	99.33 \pm 0.28	5.22 \pm 0.20	5.26 \pm 0.20
Big.B. ...	238	110.02 \pm 0.30	6.77 \pm 0.21	6.15 \pm 0.19	157	110.16 \pm 0.34	6.28 \pm 0.24	5.70 \pm 0.22
U.F.H. ...	232	65.41 \pm 0.23	5.23 \pm 0.16	8.00 \pm 0.25	156	65.01 \pm 0.24	4.39 \pm 0.17	6.75 \pm 0.26
T.F.H. ...	232	116.66 \pm 0.34	7.72 \pm 0.24	6.62 \pm 0.21	155	116.75 \pm 0.39	7.18 \pm 0.28	6.15 \pm 0.24
N.H. ...	236	49.32 \pm 0.19	4.28 \pm 0.13	8.67 \pm 0.27	157	48.34 \pm 0.21	3.90 \pm 0.15	8.08 \pm 0.31
N.B. ...	237	36.39 \pm 0.14	3.29 \pm 0.10	9.04 \pm 0.28	157	36.15 \pm 0.17	3.14 \pm 0.12	8.70 \pm 0.33
Int.Oc.B.	236	32.93 \pm 0.14	3.27 \pm 0.10	9.94 \pm 0.31	157	32.62 \pm 0.15	2.83 \pm 0.11	8.69 \pm 0.33
C.I. ...	237	80.97 \pm 0.15	3.51 \pm 0.11	4.33 \pm 0.13	157	81.20 \pm 0.19	3.58 \pm 0.14	4.41 \pm 0.17
U.F.I. ...	231	46.00 \pm 0.17	3.78 \pm 0.12	8.22 \pm 0.26	156	46.26 \pm 0.18	3.40 \pm 0.13	7.36 \pm 0.28
T.F.I. ...	230	83.70 \pm 0.24	5.43 \pm 0.17	6.49 \pm 0.20	155	83.72 \pm 0.27	5.05 \pm 0.19	6.04 \pm 0.23
N.I. ...	236	73.03 \pm 0.39	8.85 \pm 0.27	12.11 \pm 0.38	157	75.20 \pm 0.47	8.64 \pm 0.33	11.48 \pm 0.44

TABLE II.—ADULT ♂—*continued.*

Siggewe.					Zurrico.				
Character.	No.	Mean.	σ	V.	No.	Mean.	σ	V.	
Stature ...	74	1655.41 \pm 4.39	55.94 \pm —	3.38 \pm 0.19	83	1660.85 \pm 3.41	46.04 \pm 2.41	2.77 \pm 0.15	
Sit.Ht. ...	—	—	—	—	54	860.00 \pm 2.95	32.18 \pm 2.09	3.74 \pm 0.24	
G.O.L. ...	80	189.08 \pm 0.48	6.33 \pm 0.34	3.35 \pm 0.18	87	188.83 \pm 0.47	6.51 \pm 0.33	3.45 \pm 0.18	
G.H.B. ...	80	152.17 \pm 0.42	5.59 \pm 0.30	3.67 \pm 0.20	87	150.30 \pm 0.39	5.38 \pm 0.28	3.58 \pm 0.18	
M.F.D. ...	80	107.45 \pm 0.41	5.49 \pm 0.29	5.11 \pm 0.27	87	110.21 \pm 0.29	3.97 \pm 0.20	3.62 \pm 0.19	
Biz.B. ...	80	137.98 \pm 0.44	5.81 \pm 0.31	4.21 \pm 0.22	87	137.68 \pm 0.44	6.15 \pm 0.31	4.47 \pm 0.23	
Ext.Orb.B.	80	99.15 \pm 0.41	5.38 \pm 0.29	5.43 \pm 0.29	87	101.16 \pm 0.47	6.45 \pm 0.33	6.38 \pm 0.33	
Big.B. ...	80	108.17 \pm 0.35	6.52 \pm 0.40	6.03 \pm 0.38	87	108.90 \pm 0.41	5.72 \pm 0.29	5.25 \pm 0.27	
U.F.H. ...	80	64.30 \pm 0.36	4.71 \pm 0.25	7.33 \pm 0.39	87	63.18 \pm 0.31	4.22 \pm 0.22	6.68 \pm 0.34	
T.F.H. ...	80	114.40 \pm 0.57	7.50 \pm 0.40	6.56 \pm 0.35	87	114.19 \pm 0.46	6.31 \pm 0.32	5.52 \pm 0.28	
N.H. ...	80	49.05 \pm 0.31	4.09 \pm 0.22	8.34 \pm 0.45	87	46.55 \pm 0.35	4.82 \pm 0.25	10.36 \pm 0.54	
N.B. ...	79	37.56 \pm 0.24	3.13 \pm 0.17	8.33 \pm 0.45	87	35.05 \pm 0.21	2.89 \pm 0.15	8.24 \pm 0.42	
Int.Oc.B.	79	30.91 \pm 0.27	3.51 \pm 0.19	11.47 \pm 0.62	87	31.29 \pm 0.18	2.51 \pm 0.13	8.02 \pm 0.41	
C.L. ...	80	80.69 \pm 0.22	2.95 \pm 0.16	3.66 \pm 0.20	87	79.78 \pm 0.25	3.51 \pm 0.18	4.40 \pm 0.23	
U.F.I. ...	80	46.61 \pm 0.27	3.63 \pm 0.19	7.79 \pm 0.42	87	45.92 \pm 0.24	3.34 \pm 0.17	7.27 \pm 0.37	
T.F.I. ...	80	82.95 \pm 0.45	5.96 \pm 0.32	7.19 \pm 0.39	87	83.03 \pm 0.36	5.00 \pm 0.26	6.02 \pm 0.31	
N.I. ...	79	77.47 \pm 0.63	8.26 \pm 0.44	10.66 \pm 0.58	87	75.92 \pm 0.68	9.36 \pm 0.48	12.33 \pm 0.64	

TABLE III.—ADULT ♀.

Malta.					Gozo.			
Character.	No.	Mean.	σ	V.	No.	Mean.	σ	V.
Stature ...	220	1506.05 \pm 2.77	61.02 \pm 1.96	4.05 \pm 0.13	49	1518.57 \pm 6.07	62.96 \pm 4.29	4.15 \pm 0.27
Sit.Ht. ...	182	813.02 \pm 2.39	47.94 \pm 1.69	5.90 \pm 0.21	30	803.50 \pm 5.42	44.03 \pm 3.83	5.48 \pm 0.48
G.O.L. ...	330	177.40 \pm 0.23	6.11 \pm 0.16	3.44 \pm 0.09	51	176.95 \pm 0.59	6.20 \pm 0.41	3.50 \pm 0.23
G.H.B. ...	329	144.62 \pm 0.20	5.41 \pm 0.14	3.74 \pm 0.10	51	144.47 \pm 0.36	3.84 \pm 0.26	2.66 \pm 0.18
M.F.D. ...	326	102.14 \pm 0.20	5.30 \pm 0.14	5.19 \pm 0.14	51	101.75 \pm 0.44	4.70 \pm 0.31	4.62 \pm 0.31
Biz.B. ...	327	127.15 \pm 0.18	4.92 \pm 0.13	3.87 \pm 0.10	51	129.27 \pm 0.42	4.46 \pm 0.30	3.45 \pm 0.23
Ext.Orb.B.	328	92.04 \pm 0.29	7.90 \pm 0.21	8.59 \pm 0.23	51	88.58 \pm 0.61	6.44 \pm 0.43	7.27 \pm 0.49
Big.B. ...	326	98.14 \pm 0.20	5.40 \pm 0.14	5.50 \pm 0.15	51	97.47 \pm 0.42	4.34 \pm 0.29	4.45 \pm 0.30
U.F.H. ...	326	62.30 \pm 0.22	4.80 \pm 0.15	7.70 \pm 0.20	51	63.32 \pm 0.46	4.92 \pm 0.33	7.77 \pm 0.52
T.F.H. ...	304	106.77 \pm 0.25	6.55 \pm 0.18	6.14 \pm 0.17	47	108.27 \pm 0.55	5.61 \pm 0.39	5.18 \pm 0.36
N.H. ...	330	49.32 \pm 0.18	4.85 \pm 0.13	9.83 \pm 0.26	51	50.45 \pm 0.38	4.05 \pm 0.27	8.03 \pm 0.54
N.B. ...	326	32.62 \pm 0.11	2.95 \pm 0.08	9.03 \pm 0.24	51	33.43 \pm 0.33	3.45 \pm 0.23	10.32 \pm 0.70
Int.Oc.B.	325	27.85 \pm 0.11	3.07 \pm 0.08	11.03 \pm 0.30	51	26.39 \pm 0.25	2.68 \pm 0.18	10.16 \pm 0.69
C.I. ...	328	81.55 \pm 0.12	3.34 \pm 0.09	4.10 \pm 0.11	51	82.37 \pm 0.32	3.36 \pm 0.22	4.08 \pm 0.27
U.F.I. ...	329	49.08 \pm 0.15	4.05 \pm 0.11	8.26 \pm 0.22	51	49.52 \pm 0.41	4.30 \pm 0.29	8.68 \pm 0.58
T.F.I. ...	303	84.25 \pm 0.23	5.91 \pm 0.16	7.02 \pm 0.19	47	84.24 \pm 0.47	4.82 \pm 0.34	5.72 \pm 0.40
N.I. ...	325	66.76 \pm 0.33	8.81 \pm 0.23	13.21 \pm 0.36	51	66.60 \pm 0.77	8.14 \pm 0.54	1.22 \pm 0.83

TABLE III.—ADULT ♀ —continued.

Urban Districts.					Rural Districts.				
Character.	No.	Mean.	σ	V.	No.	Mean.	σ	V.	V.
Stature ...	111	1509.66 \pm 3.92	61.24 \pm 2.77	4.06 \pm 0.18	99	1503.03 \pm 4.37	64.41 \pm 3.09	4.29 \pm 0.21	
Sit.Ht. ...	108	804.25 \pm 2.42	37.33 \pm 1.71	4.64 \pm 0.21	74	828.58 \pm 3.78	48.22 \pm 2.67	5.82 \pm 0.32	
G.O.L. ...	184	177.29 \pm 0.30	6.10 \pm 0.21	3.44 \pm 0.12	146	177.49 \pm 0.34	6.03 \pm 0.24	3.40 \pm 0.14	
G.H.B. ...	183	145.09 \pm 0.27	5.49 \pm 0.19	3.78 \pm 0.13	146	144.03 \pm 0.29	5.23 \pm 0.21	3.64 \pm 0.14	
M.F.D. ...	182	102.36 \pm 0.26	5.14 \pm 0.18	5.02 \pm 0.18	144	101.83 \pm 0.31	5.50 \pm 0.22	5.40 \pm 0.22	
Biz.B. ...	183	127.82 \pm 0.25	4.99 \pm 0.18	3.91 \pm 0.14	144	126.38 \pm 0.26	4.61 \pm 0.18	3.65 \pm 0.14	
Ext.Orb.B.	183	93.82 \pm 0.39	7.83 \pm 0.28	8.35 \pm 0.30	145	89.83 \pm 0.41	7.34 \pm 0.29	8.12 \pm 0.32	
Big.B. ...	184	98.64 \pm 0.27	5.44 \pm 0.19	5.52 \pm 0.19	142	97.50 \pm 0.31	5.45 \pm 0.22	5.59 \pm 0.22	
U.F.H. ...	182	61.51 \pm 0.23	4.50 \pm 0.16	7.31 \pm 0.26	144	62.89 \pm 0.27	4.86 \pm 0.19	7.73 \pm 0.31	
T.F.H. ...	168	106.21 \pm 0.36	6.86 \pm 0.25	6.46 \pm 0.24	136	107.51 \pm 0.34	5.81 \pm 0.24	5.40 \pm 0.22	
N.H. ...	184	48.58 \pm 0.24	4.81 \pm 0.17	9.91 \pm 0.35	146	50.07 \pm 0.27	4.76 \pm 0.19	9.50 \pm 0.38	
N.B. ...	183	32.17 \pm 0.15	3.02 \pm 0.11	9.38 \pm 0.33	143	32.72 \pm 0.16	2.82 \pm 0.11	8.60 \pm 0.35	
Int.Oc.B.	182	27.96 \pm 0.17	3.31 \pm 0.12	11.98 \pm 0.48	143	27.73 \pm 0.17	2.98 \pm 0.12	10.74 \pm 0.43	
C.I. ...	183	81.83 \pm 0.17	3.32 \pm 0.12	4.05 \pm 0.14	146	81.16 \pm 0.18	3.25 \pm 0.13	4.00 \pm 0.16	
U.F.I. ...	184	48.54 \pm 0.20	3.97 \pm 0.14	8.19 \pm 0.29	145	49.96 \pm 0.24	4.28 \pm 0.17	8.57 \pm 0.34	
T.F.I. ...	168	83.33 \pm 0.30	5.84 \pm 0.21	7.01 \pm 0.26	135	85.24 \pm 0.34	5.88 \pm 0.24	6.90 \pm 0.28	
N.I. ...	183	67.36 \pm 0.42	8.40 \pm 0.30	12.48 \pm 0.45	142	65.96 \pm 0.52	9.16 \pm 0.37	13.89 \pm 0.57	

TABLE IV.—SIGNIFICANT DIFFERENCES. CRANIA.

Mediæval Chapel of Bones and Modern Valletta.

Character.				Means.		Variations.	
				Δ_{C-V}	$\frac{\Delta}{\epsilon_{\Delta}}$	$V_V - V_C$	$\frac{\Delta}{\epsilon_{\Delta}}$
O.O.L.	...	...	...	—	—	—	—
G.O.L.	...	...	...	1.93 ± 0.63	3.06	—	—
G.B.	...	...	...	—	—	—	—
M.F.D.	...	...	...	—	—	—	—
Biz.B.	...	...	...	2.06 ± 0.58	3.56	—	—
N.H.	...	...	...	—	—	2.18 ± 0.53	4.10
N.B.	...	...	...	0.87 ± 0.18	4.83	—	—
R.B.H.	...	...	...	2.12 ± 0.45	6.69	—	—
B.N.	...	...	...	—	—	1.75 ± 0.44	3.98
B.A.	...	...	...	1.68 ± 0.54	3.10	—	—
U.F.H.	...	...	...	1.52 ± 0.45	3.36	—	—
F.B.	...	...	...	1.88 ± 0.52	3.60	—	—
O.B.L.	...	...	...	1.52 ± 0.22	6.96	—	—
O.B.R.	...	...	...	2.70 ± 0.29	9.43	—	—
O.H.L.	...	...	...	—	—	3.55 ± 0.86	4.13
O.H.R.	...	...	...	—	—	3.02 ± 0.83	3.63
P.L.	...	...	...	1.33 ± 0.43	3.06	—	—
P.B.	...	...	...	—	—	—	—
C.I.	...	...	...	-1.92 ± 0.41	4.73	—	—
V.I.	...	...	...	—	—	—	—
U.F.I.	...	...	...	—	—	—	—
O.I.L.	...	...	...	—	—	—	—
O.I.R.	...	...	...	—	—	—	—
N.I.	...	...	...	1.32 ± 0.40	3.29	—	—

TABLE V.—SIGNIFICANT DIFFERENCES. LIVING.
Means ♂.

Character.	Malta and Gozo.		Urban District and Rural District.		Urban District and Siggewe.		Urban District and Zurricco.		Zurricco and Siggewe.	
	Δ_{M-G}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-R}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-S}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-Z}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{S-Z}	$\frac{\Delta}{\epsilon_{\Delta}}$
G.O.L.	3.32 ± 0.53	6.26	None.	—	None.	—	None.	—	None.	—
H.B.	None.	—	"	—	"	—	2.62 ± 0.45	5.79	1.87 ± 0.57	3.26
M.F.D.	2.05 ± 0.51	4.02	"	—	3.32 ± 0.48	6.99	None.	—	2.76 ± 0.50	5.50
Biz.B.	None.	—	"	—	1.55 ± 0.51	3.06	1.85 ± 0.51	3.66	None.	—
Ext.Orb.B.	3.10 ± 0.51	6.05	"	—	None.	—	None.	—	2.01 ± 0.62	3.22
Big.B.	2.10 ± 0.53	3.99	"	—	—1.85 ± 0.46	4.01	"	—	None.	—
U.F.H.	None.	—	"	—	None.	—	2.23 ± 0.39	5.78	"	—
T.F.H.	"	—	"	—	2.26 ± 0.66	3.41	2.47 ± 0.57	4.31	"	—
N.H.	2.07 ± 0.38	5.45	0.98—0.28	3.46	None.	—	2.77 ± 0.40	6.96	2.50 ± 0.47	5.35
N.B.	—0.77 ± 0.26	3.00	None.	—	1.17 ± 0.28	4.21	1.34 ± 0.25	5.31	2.51 ± 0.32	7.87
Int.Oc.B.	?	—	"	—	2.02 ± 0.30	6.65	1.64 ± 0.23	7.19	None.	—
C.I. ...	1.29 ± 0.27	4.78	None.	—	None.	—	1.19 ± 0.31	3.86	None.	—
U.F.I.	None.	—	"	—	"	—	None.	—	"	—
T.F.I.	"	—	"	—	"	—	"	—	"	—
N.I.	"	—	2.17—0.61	3.55	4.44 ± 0.74	5.99	"	—	"	—

SIGNIFICANT DIFFERENCES.
Variations ♂.

Character.	Malta and Gozo.		Urban District and Rural District.		Urban District and Siggewe.		Urban District and Zurricco.		Zurricco and Siggewe.	
	Δ_{M-G}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-R}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-S}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-Z}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{S-Z}	$\frac{\Delta}{\epsilon_{\Delta}}$
M.F.D.	—	—	—	—	—	—	1.93 ± 0.28	6.82	1.49 ± 0.33	4.51
E.O.B.	1.38 ± 0.38	3.67	—	—	—	—	—	—	—	—
U.F.H.	—	—	1.25 ± 0.36	3.47	—	—	—	—	—	—
T.F.H.	1.51 ± 0.30	5.04	—	—	—	—	—	—	—	—
N.H.	—	—	—	—	—	—	2.28 ± 0.62	3.66	—	—

TABLE V.—SIGNIFICANT DIFFERENCES. LIVING—continued.

Character.	Means ♀.			Variations.					
	Malta and Gozo.		Urban District and Rural District.	Malta, ♀ and ♂.		Malta and Gozo ♀.		Urban District and Rural District ♀.	
	Δ_{M-G}	$\frac{\Delta}{\epsilon_{\Delta}}$		$\Delta_{\delta-\phi}$	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{M-G}	$\frac{\Delta}{\epsilon_{\Delta}}$	Δ_{U-R}	$\frac{\Delta}{\epsilon_{\Delta}}$
G.O.L.	None.	—	None.	—	None.	None.	—	None.	—
H.B.	"	—	"	—	"	"	5.25	"	—
M.F.D.	"	—	"	—	"	"	—	"	—
Biz.B.	2.12 ± 0.46	4.64	1.44 ± 0.36	0.41 ± 0.13	3.15	"	—	"	—
E.O.B.	3.46 ± 0.68	5.12	3.99 ± 0.57	-3.17 ± 0.26	12.43	"	—	"	—
Big.B.	None.	—	None.	None.	—	1.05 ± 0.34	3.13	"	—
U.F.H.	"	—	-1.38 ± 0.35	"	—	None.	—	"	—
T.F.H.	"	—	None.	"	—	"	—	"	—
N.H.	"	—	-1.49 ± 0.36	-0.98 ± 0.32	3.10	"	—	"	—
N.R.	"	—	None.	None.	—	None.	3.00	"	—
L.O.B.	1.46 ± 0.27	5.35	"	(?)	—	"	—	"	—
C.L. ...	None.	—	None.	-0.41 ± 0.12	3.42	None.	—	None	—
U.F.I.	"	—	-1.42 ± 0.31	None.	—	"	—	"	—
T.F.I.	"	—	-1.91 ± 0.45	"	—	"	—	"	—
N.I.	"	—	None.	"	—	"	—	"	—

TABLE V.—SIGNIFICANT DIFFERENCES, LIVING—*continued.*

Means ♂ and ♀ (Indices).			Coefficients of Correlation.		
Malta.			Malta.		
Character.	$\Delta \delta - \varphi$	$\frac{\Delta}{\epsilon} \frac{1}{\epsilon}$	Character.	$\Delta \delta - \varphi$	$\frac{\Delta}{\epsilon} \frac{1}{\epsilon}$
C.I.	T.F.H. and Biz.B. ...	0.25 ± 0.08	5.28
U.F.I.	Urban and Rural Districts ♀.	0.29 ± 0.08 0.35 ± 0.07	3.74 4.74
T.F.I.			
N.I.			
	-0.84 ± 0.16 -2.49 ± 0.19 — -0.85 ± 0.13	5.38 13.39 — 6.49	G.O.L. and G.B. ...	Urban Districts and Siggewo ♂. -0.24 ± 0.07	3.37

TABLE VI.—COEFFICIENTS OF CORRELATION.

Living ♂.

Character.	Malta.	Gozo.	Urban Districts.	Rural Districts.	Siggewe.	Zurrico.
G.O.L. and G.B. ...	0.325 ± 0.025	0.405 ± 0.063	0.215 ± 0.042	0.319 ± 0.048	0.459 ± 0.059	0.217 ± 0.069
U.F.H. and Biz.B. ...	0.135 ± 0.028	0.308 ± 0.068	0.205 ± 0.043	0.176 ± 0.052	0.175 ± 0.073	0.197 ± 0.069
T.F.H. and Biz.B. ...	0.321 ± 0.026	0.287 ± 0.071	0.344 ± 0.039	0.370 ± 0.047	0.164 ± 0.073	0.288 ± 0.066
N.H. and N.B. ...	0.111 ± 0.028	0.199 ± 0.071	0.065 ± 0.044	0.065 ± 0.054	0.193 ± 0.073	0.136 ± 0.071

Living ♀.

G.O.L. and G.B. ...	0.350 ± 0.033	0.144 ± 0.093	0.375 ± 0.043	0.356 ± 0.049	—	—
U.F.H. and Biz.B. ...	0.101 ± 0.037	— 0.057 ± 0.094	0.064 ± 0.050	— 0.007 ± 0.056	—	—
T.F.H. and Biz.B. ...	0.074 ± 0.039	0.168 ± 0.096	0.156 ± 0.051	— 0.130 ± 0.057	—	—
N.H. and N.B. ...	0.021 ± 0.037	0.131 ± 0.093	0.164 ± 0.049	— 0.182 ± 0.055	—	—

Skulls ♂.

Character.	Mediaeval Chapel of Bones.	Modern Valletta.
G.O.L. and G.B. ...	0.079 ± 0.031	0.173 ± 0.102
H.L. and B.B. ...	0.149 ± 0.031	0.366 ± 0.092
U.F.H. and Biz.B. ...	0.183 ± 0.042	0.163 ± 0.106
O.B. & O.H.L. ...	0.189 ± 0.031	0.410 ± 0.091
O.B. and O.H.R. ...	0.154 ± 0.031	0.344 ± 0.111
N.H. and N.B. ...	0.107 ± 0.032	0.653 ± 0.060
C.S. and Bic.L. ...	0.178 ± 0.039	—

TABLE VII.—PIGMENTATION.

Hair Colour.

Hair Colour.		Absolute Figures.									
		♂						♀			
		U.D.	R.D.	Sig.	Zur.	Malta.	Gozo.	U.D.	R.D.	Malta.	Gozo.
Black ...	...	150	99	51	30	330	56	107	102	209	38
Brown ...	...	65	44	27	56	192	24	64	38	102	13
Fair ...	...	2	1	1	1	5	1	3	—	3	—
Total ...	...	217	144	79	87	527	81	174	140	314	51

Hair Colour.		Percentages.									
		♂						♀			
		U.D.	R.D.	Sig.	Zur.	Malta.	Gozo.	U.D.	R.D.	Malta.	Gozo.
Black ...	...	69·1	68·8	64·5	34·5	62·6	69·1	61·5	72·8	66·5	74·5
Brown ...	...	30·0	30·5	34·2	64·4	36·5	29·7	36·8	27·2	32·5	25·5
Fair ...	...	0·9	0·7	1·3	1·1	0·9	1·2	1·7	—	1·0	—
Total ...	...	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

Eye Colour.

Eye Colour.		Absolute Figures.									
		♂						♀			
		U.D.	R.D.	Sig.	Zur.	Malta.	Gozo.	U.D.	R.D.	Malta.	Gozo.
Brown ...	...	121	82	37	58	298	58	136	109	245	38
Intermediate ...	...	71	41	34	16	162	15	32	24	56	6
Blue ...	...	43	31	8	13	95	8	15	12	27	7
Total	235	154	79	87	555	81	183	145	328	51

REHTIA, THE VENETIC GODDESS OF HEALING.¹

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1. IN a paper read before Section H of the British Association at Manchester in 1915, Professor R. S. Conway described in detail three groups of votive offerings made to the Venetic goddess *Rehtia*.² This deity, whose cult is of considerable interest as well as of no small importance to the student of early Mediterranean religion, was unknown both to W. H. Roscher (*Ausführliches Lexicon der griechischen und römischen Mythologie*) and even to the editors of the all but exhaustive German *Real-Encyclopädie der classischen Altertumswissenschaft*. Her shrine occupied part of the site now known as the *Fondo Baratela* near to Este (the ancient Ateste, 15 miles to the south-west of Padua), and close to the river Adige (the ancient Athesis, a tributary of the Po). The groups of offerings in question are (1) bronze statuettes of racehorses, or rather the pedestals on which the statuettes stood, for these, with the adhering hoofs of the horses, are all that has survived—none of the miniature horses from the same site will fit on to these pedestals and hoofs; (2) bronze alphabetic tablets;³ (3) rectangular “nails” (as they are generally called), some of iron, but the majority of bronze, many of them inscribed, and with small pendant objects which were referred to by Professor Conway as “wedges.” The second and third groups have never been satisfactorily explained; the present paper is an attempt to explain this third class, and, incidentally, to show more precisely than has been done hitherto what, in the first instance at any rate, the healing functions of *Rehtia* were in the thoughts of her worshippers. That she was a goddess of healing is inferred from the epithet frequently applied to her in the dedicatory

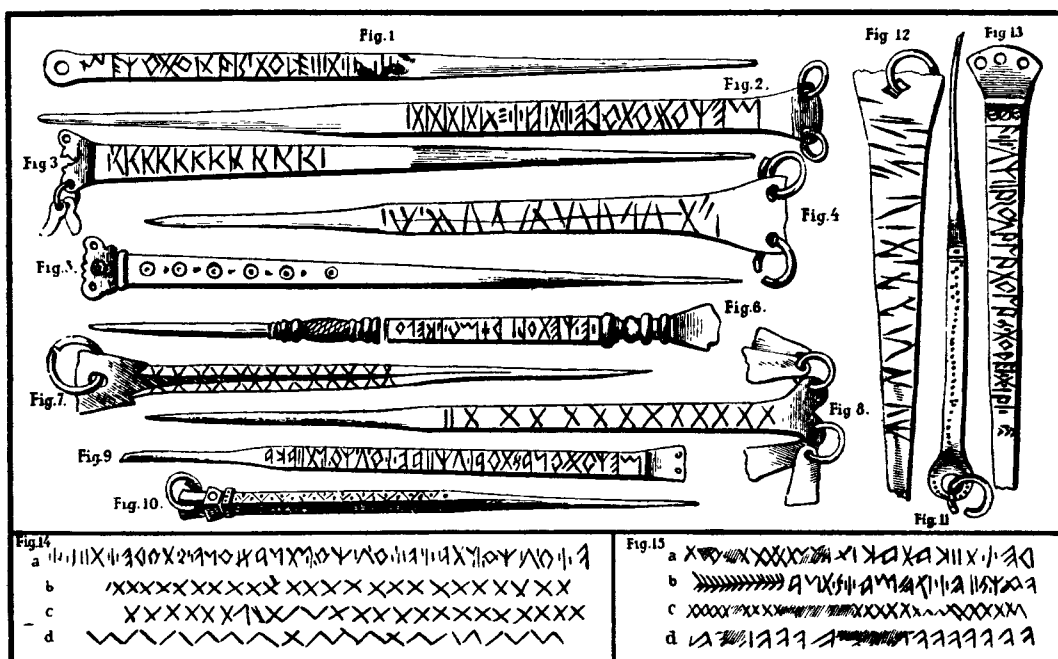
¹ An expansion of a paper read before Section H of the British Association for the Advancement of Science, September, 1921 (Edinburgh meeting).

² I owe my knowledge of the cult of *Rehtia*, first to the teaching of Professor R. S. Conway at Manchester in 1916, and next to the same scholar's articles *Veneti* in the *Enc. Brit.* (ed. 11, 1910–11), and *Italy* (*Ancient*) sect. 3 (9), *Veneti* in Hastings' *Enc. of Rel. and Ethics*, vol. vii (1914), and to his papers in the *Proc. of the Camb. Philol. Soc.* (1914, printed 1915, pp. 6 *sqq.*) and in the *Journal of the Roy. Anthropol. Inst.*, vol. xlii, 1916, pp. 221 *sqq.* To this last paper (with the plate accompanying it) I refer the reader for a discussion of the two groups of offerings to *Rehtia* not dealt with here. In publishing this paper I have to acknowledge the helpful criticisms of Professor Sir Wm. Ridgeway and of Professor Conway. I am also indebted to Mr. A. B. Cook, Reader in Classical Archaeology in the University of Cambridge, for numerous references to modern archaeological works, for valuable assistance in selecting the illustrations, and for readily granted permission to refer to work of his which is still in the press.

³ See *Journ. Roy. Anthropol. Inst.*, xlii, 1916, plate xi, figs. 4–7.

inscriptions of both alphabetic tablets and so-called “nails,” *ś a h n a t e h* (dat. sg.) “to the Healer” (compare Latin *san-āre*), and from the combination of letters *a k e o*, which is sixteen times repeated on every one of the alphabetic tablets—in the complete specimens—(compare Greek *ἰκέομαι* “heal”)¹ as well as from a comparison with the Spartan goddess Artemis *Orthia*, of which more will be said below.

2. The third group of offerings is by far the most numerous. Not counting the iron ones, over 200 specimens have been found of these objects, which have been described as looking “like long and solid hatpins made of bronze.” In length they



I.—PINS OFFERED TO REHTIA (FROM “NOTIZIE DEGLI SCAVI,” 1888, TAV. IV).

range between 12 and 24 cm. (4·7 to 9·4 inches); in shape they are nearly all four-sided, tapering gradually to a point, although occasionally (*e.g.* in Fig. 6) the quadrangular elongated pyramid form is preserved only in the inscribed portion, the rest (excepting the handle) being rounded, *i.e.* circular in cross-section. The handles are nearly always flattened out, and sometimes show an outline of rather elaborate, if not very artistic, curves (Figs. 3, 5, 8), and are pierced with one, two, or three holes through which single rings or, very rarely, short chains, are fastened ;

¹ It is not necessary here to enter into the question what part of the verb (aor. impv. ?) or noun (*cf.* Gk. nouns in *ω* ?) the form *akeo* is ; that it is formed from the same root as Greek *ἰκέομαι* is a convincing suggestion due to Professor Conway, who kindly allows me to quote it here.

specimens with articulate inscriptions (seventeen in number) being offered by *women*. But it is perhaps worth observing that, since the name $\cdot e \cdot \chi e t o r$ may be abbreviated),¹ it is at least as likely that a feminine as a masculine termination was intended. Again, taking a specimen that has only alphabetic signs (Pauli 42, fig. 8 above), we find \times (*t*) repeated twelve times on one side (followed by two vertical strokes), and three other letters in the three other lines, namely, \aleph (*e*), 𐌶 (*v*), and 𐌷 (*z*) (again followed by two vertical strokes, in the second line by three). In this class, which we may call alphabetic, by far the most frequent letter is \times (*t*)²; it also occurs frequently on some of the specimens with genuine inscriptions (as we have seen), and (in combination with other letters) on the alphabetic tablets. Its significance in connection with the worship of Rehtia will be further considered later. The other letters which appear on this specimen are the three which occur most frequently next to \times (*t*) itself.³

3. As to chronology, it should be pointed out that the votive offerings to Rehtia are probably all to be assigned to the third and fourth periods at Este—that is, they fall, roughly, between 600 and 200 B.C.; the pins themselves belong perhaps less to the third period than to the fourth, in which Keltic or La Tène objects are beginning to appear. The cult of Rehtia then seems to have been at its greatest height of popularity in the third century B.C. For be it observed that the remains at Este⁴ of the Early Iron Age fall into three periods, of which the first corresponds roughly to the first and second of the older Villanova periods (known as *Benacci I* and *Benacci II*), the second to the third Villanova period (*Arnoaldi*), and the third to the later Villanova (or Certosa) period. Although the general correspondence of these periods and their chronological sequence are clear, and accepted by archæologists, it must not be assumed that they coincide exactly in date with the Villanova periods; exact dates indeed are still difficult to determine and much disputed. According to Hoernes⁵ the first period at Este begins somewhat later than the first *Benacci* and ends somewhat earlier than the second *Benacci* period, the second Este period is on the whole half a century earlier than the *Arnoaldi* period, and the third Este period begins earlier than the Certosa period, but both come to an end about the same time, the Villanova civilization being interrupted by the Gallic invasion of North Italy in the fifth and subsequent centuries B.C.

¹ Cf. $\cdot e \cdot \chi e t o r i i \cdot o h$ Pauli 250, Conway 114.

² Professor Conway, *l.c.*, points out that of "the 180 odd specimens seen by him only eight are without it."

³ The pins described in detail above (Pauli 24, 21, 42) are shown in *Journ. Roy. Anthropol. Inst.*, xlii, 1916, plate xi, Figs. 1-3.

⁴ Illustrated by Hoernes, *Die Hallstattperiode* (in *Arch. f. Anthropologie*, N.F. III (xxxi), 1905, pp 233 *sqq.*), Fig. 12 (p. 257), periods I-III, and more elaborately by Montelius, *La Civilisation primitive en Italie*, I ser., B, plates 50-60. Both Hoernes and Montelius illustrate series of objects from the neighbourhood of Bologna, with which the Este groups should be compared.

⁵ *l.c.*

It is certain then that the people of Este, in common with the other Veneti, had passed through the whole of the Early Iron Age, Hallstatt or Villanova civilization, as it is variously known, from its beginnings in Italy down to the coming of the Gauls.

4. To return to Rehtia. A suggestion had previously been made¹ that the peculiar votive objects which we have been examining "represent nails and wedges attributed, as we know from Horace, to the Etruscan Goddess of Fate or Fortune, known to the Romans as *Nortia*"—that is, that the Venetic goddess would appear to have, at least in part, the same functions as *Nortia*, who used nails and wedges to build up and pull down at her will. "It is commonly supposed that they were the symbols of her power as a master-builder of the fabric of men's lives." "Horace's stanza,"² continues Professor Conway, "certainly suggests that he took his description from some well-known statue." This perhaps is not quite so certain as Professor Conway thinks; but be that as it may, we shall, I venture to think, find better grounds for a comparison of Rehtia with *Juno* as *Lucina*, *Februa* and *Fluonia* than with *Nortia* (or *Necessitas*), although, at first sight, Dr. Giles' suggestion seems attractive and is not to be rejected without consideration. But *Nortia* was essentially a goddess of Fortune in a way in which Rehtia, so far as we can judge, was not; and Rehtia was essentially a goddess of Healing, whereas *Nortia*, was only secondarily represented in this capacity. The comparison of Rehtia and *Nortia* rests on the interpretation of these votive objects as "nails" and "wedges," which is not perhaps an untrue description, but I think is misleading none the less because not sufficiently precise. The so-called "wedges" are strangely out of proportion to the size of the "nails"; and why fasten "wedges" to "nails" with chains or rings? Again, it must be asked, is not Horace (who, we must not forget, is describing not *Nortia* directly but *Necessitas*, and probably

¹ By Dr. P. Giles, and accepted by Conway, see *Journ. Roy. Anthropol. Inst.*, vol. xlii (N.S. xix), 1916, p. 225; the above quotations are taken from this article. But I now find (May, 1921) that this suggestion was anticipated by Ghirardini, *Notizie degli Scavi*, 1888, pp. 319 sq., who not only refers to the passage in Horace (*carmin.* i, 35, 17 sq. : *te semper anteit sæua Necessitas, / c l a u o s trabales et c u n e o s manu / gestans æna, nec seuerus / unguis ab est liquidumque plumbum*: cf. also *id.*, *carmin.*, iii, 24, 6 sq., iii, 1, 14 sq., i, 3, 32 sq.) to show the connection of nails with *Necessitas* (i.e. with *Nortia*, as generally interpreted), but also quotes Liv. vii, 3, 3, ix, 28, 6—add 34, 12 (J.W.)—Plin. *N.H.* xxviii, 4, 11 (46), 6, 17 (63) as evidence for the magical potency of nails and nail-driving. He concludes that the objects dedicated to Rehtia were nails serving some similar magical purpose (e.g. to obtain deliverance from plague). But Ghirardini did not press the comparison in respect of the small pendant objects. He observed the similarity of these so-called "wedges" to the well-known objects found in Early Iron Age deposits over a wide area, and which are to be considered more fully below. He did not, however, perceive the full meaning and importance of this comparison (which I am bound to add had occurred to me independently in November, 1920, before I had read Ghirardini's account), and accordingly he contented himself with pointing out the similarity and pursued the comparison no further; *clauum figere* (ἡλφ δειν) in connection with *defixiones* or *diræ* ("spells," "curses" *κατάδεσμοι*) is clearly a case of sympathetic magic (cf. Roberts and Gardner, *Greek Epigraphy*, ii, p. 531).

² Quoted in the footnote above.

thinking of the Greek personification of Ἀνάγκη) drawing partly upon his imagination? Nortia's nails had one use, and one only, according to Livy,¹ who quotes a *lex vetusta, priscis litteris uerbisque scripta*, and the historian L. Cincius Alimentus² as his ultimate authorities for the Roman and Etruscan customs respectively—a nail was driven annually into the wall of the shrine of Minerva in the Capitoline temple at Rome, on the Ides of September, and also into the wall of the temple of Nortia at Volsinii, on what date we are not told. This is a very different story from Horace's account of the significant use to which Necessitas put her nails.³ Livy gives the common-sense interpretation⁴ that these nails were driven at fixed intervals primarily to mark the passage of time. From this it is a short and easy step to the idea of the approach of doom—good or ill—brought to each and all by the inexorable Goddess of Fortune who advances as slowly but as surely as time itself, neither hastening nor delaying, certain of securing her victim in the end. The more fanciful interpretation of the nails given by Horace, who is primarily concerned to describe Necessitas, may possibly have been derived from the current view of his day, and this in turn may have been a genuine development of the idea of Nortia; on the other hand, it may equally well be nothing more than poetical elaboration. Besides nails we do not know for certain that the *uncus* (hook (or clamp)) was an attribute of Nortia,⁵ still less wedges (for Horace is a doubtful authority for this); and the molten lead, *liquidumque plumbum*, savours perhaps more of poetic fancy than of an actual statue of the goddess. Here Rehtia, so far as we know, offers no comparison at all. It may indeed be doubted whether Horace's description is trustworthy evidence for the attributes even of Necessitas; if we may venture to accept the identification⁶ of an ancient statue, the whereabouts of which are no longer known,

¹ vii, 3, 5 *sqq.*

² *Floruit* 210 B.C.

³ *Carm.* iii, 24, 5 *sqq.*, *si figit adamantinos / summis uerticibus dira Necessitas / clauos*, where by *uerticibus* is most probably meant "house-top," not "head, skull" (see the context).

⁴ I have more to say about Nortia in an essay on Minerva, which I hope to publish later elsewhere.

⁵ Perhaps Juv., *Sat.*, x, 66, 74, beside Hor., *carm.*, i, 35, 20, suggests that it was; but the inference is by no means certain. And most editors favour the interpretation of *uncus* in Hor. as "clamp," not "(executioner's) hook."

⁶ By Smith; see the cut in his *Dict. of Antiqu.* ed. 3, art. *Clauus* i, p. 453, from Causeus (La Chausse), *Romanum Museum*, ed. 3 (1746), tom. i, sect. ii, p. 72, pl. 28, where, however, it is described as a statue of Fortuna "apud I. P. Bellorium." The *cornucopiæ* of course is a constant attribute of Fortuna. Mr. A. B. Cook, whom I consulted, is inclined to think that the statue is probably genuine, but does not feel convinced that it is a representation of Necessitas. The nail seems fairly certain, although Montfaucon, *Antiquity Explained* (1721), vol. i, bk. ii, p. 195, took it for the handle (*clauus*) of the rudder (*gubernaculum*), which Fortune is often represented as holding in her right hand, and a doubt occurs to me whether La Chausse (who in this point of detail is followed by Smith) did not misunderstand *clauus* as "nail" in some written or printed account of the statue, in which the words have been used really to mean "handle of the rudder." But in La Chausse's cut the object much more resembles a *clauus trabalis* than a tiller; it has the large, flat head of a nail and is only very slightly curved.

as a figure of Necessitas, we have at least one representation of the goddess holding a nail (in her right hand), but no other one of the implements enumerated by Horace. Instead she carries (in her left hand) such an instrument of beneficence as the horn of plenty, *cornucopiæ*, which presumably indicates her power to bring fair as well as hard fortune, prosperity as well as adversity, according as a man's lot was preordained. If then Horace's account of Necessitas and her equipment is in itself too poetic to be taken as archæological evidence, still less is it possible to accept it as a statement of the attributes of Nortia, whose nail (and this is the sole point on which the comparison of Necessitas and Nortia rests) originally served a different purpose. Thus the further comparison of Rehtia and Nortia, in virtue of Rehtia's "nails" and supposed "wedges," must, if we wish to proceed upon definite archæological evidence, be limited to the nails, and is seen to be, if not entirely mistaken, based upon a foundation which is far from certain.

5. The explanation which I venture now to submit is that *these offerings to Rehtia are really a specialized votive type of hairpin with pendant axe-form amulets*. Let it be observed at the outset that this statement does not imply that these very objects now preserved in the museum at Este were ever actually used as hairpins; it is at once apparent from the illustrations that many of them, though not too long to be used to fasten a top-knot, are rather heavy and clumsy to have been exactly desirable and comfortable in use even for this limited purpose.¹ Still they are not vastly different in general appearance from certain types of ancient hairpins,² which were often very large and cumbrous, considering their use. A length of 9 inches (22·9 cm.) is by no means unknown; and frequently they are somewhat thick and heavy, sometimes four-sided like our Venetic specimens. One of our examples, it has already been noted,³ is of a rounded, stiletto type, except in the inscribed portion, and bears a more distinct resemblance to the ordinary ancient pin used for the hair. There is no real difficulty in regarding these objects from the temple of Rehtia as pins. If stress were laid on their size and comparative heaviness, there would be the easy and obvious explanation to hand that they are specifically *ex voto*, made as offerings to the goddess and never meant for actual use.⁴ There was no necessity for votive offerings to conform, and in fact ancient votive offerings rarely did conform, to the actual size of the originals from which they were copied or

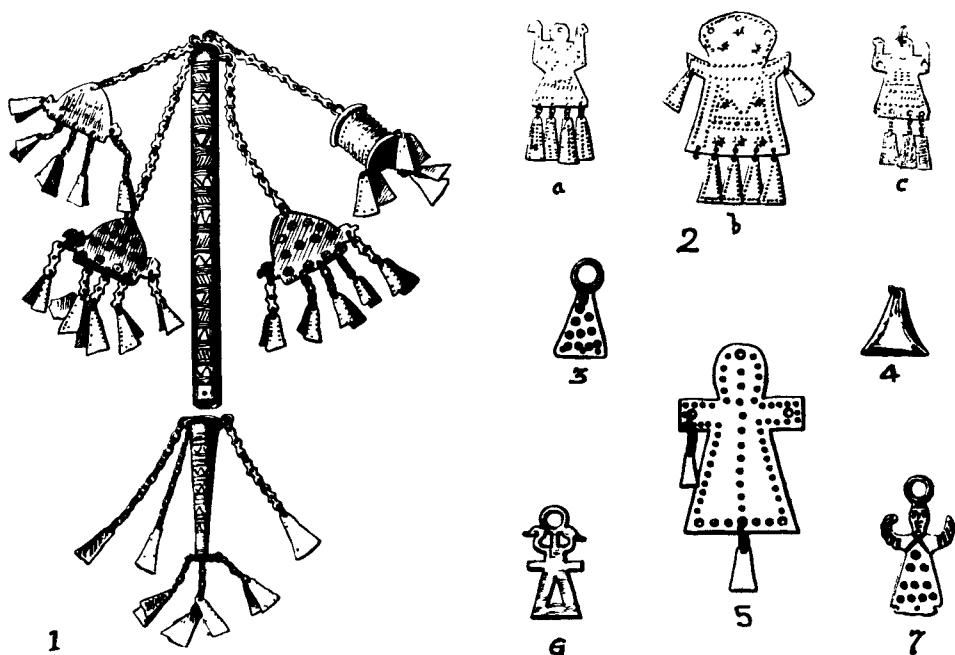
¹ Professor Conway reminds me that the technical and artistic skill of an early and possibly primitive people to produce pins in bronze which would pierce a heavy coil of hair may easily be over-estimated. Already in the Bronze Age, however, fine, pointed pins could be made which were also strong enough for all ordinary purposes such as fastening garments.

² See the articles *acus* in Smith *Dict. of Antiqu.*, Daremberg et Saglio; and Baumeister's *Denkmäler s.v. Nadeln*.

³ p. 213 *supr.*

⁴ When this paper was read before Section H of the British Association, Miss Margaret Murray pointed out that the elaborate hair-dressing in vogue amongst the women of early Mediterranean peoples would necessitate long strong hair-pins.

imitated ; often they depart very considerably from such limitations. Diminutive statuettes will occur to everyone's mind, or another example can be found in the magical and votive axes of which something is to be said presently ; miniature ritual vases have appeared in the *terre mare* and in some of the western lake-dwellings.¹ On the other hand, votive objects are sometimes larger than the natural size ;² excluding instances such as the prehistoric megaliths, the gigantic votive craters of Greek temples or the colossal statuary of the Hellenistic period—which are scarcely to the point—there are the unusually large fibulæ larger than practical need could require, or the models of various limbs of the body made on an exaggerated scale and offered to healing divinities. In short it is abundantly clear that no imperative



II.—AXE-SHAPED TALISMANS OF EARLY IRON AGE.

necessity was generally recognized by the ancients to make votive offerings of precisely identical size or proportions with the actual objects which they represented. Accordingly, once the pin had become established as a type of votive offering to *Rehtia* (as we shall shortly see it might well be, and as it often was elsewhere to other deities which shared a particular function), such pins would consistently be made in the thick and heavy style for this particular purpose ; for there was also a special reason for this large scale in the need for a size of sufficient breadth to hold a dedicatory inscription. It is entirely justifiable therefore to discard Ghirardini's

¹ Peet, *Stone and Bronze Ages in Italy*, p. 358.

² See some remarks by A. B. Cook in *Folklore*, xiv, 1903, pp. 270 sq.

description of these Venetic objects as “nails,” and instead to describe them as pins.¹

6. In the axe-shaped talismans or amulets which have been found in great abundance in Early Iron Age deposits distributed over the whole of Europe wherever the Hallstatt culture was carried, there is a complete and entirely satisfactory parallel—which, so far as I am aware, has not yet been explored—to the small pendant objects, previously regarded as “wedges” but left without convincing explanation. These amulets retain to a large extent the simple axe-form from which they were developed (Fig. 4)² and which is still preserved entire in the scores of miniature axes discovered in Italy, Greece, Crete and Asia Minor, as well as in Central Europe. With these miniature axes³ we are not here immediately concerned, except to notice that they were employed for votive purposes; but the axe-form amulets demand further consideration. Their close relation to the simple axe-shape is at once clear from the illustrations (Figs. 1–7), in spite of the variations which on the one hand result in mere trapezoidal or triangular plates of metal, on the other in anthropomorphic designs. The projecting ears or lugs of the diminutive pendant axe were suggestive of human arms, and the narrow end of the celt, where it is attached to the haft, of a human head. The addition of a ring by which to suspend the talisman from some article of apparel produces an advanced type, such as the one from Tribano, near Padua (Fig. 7).⁴ Sometimes the lugs are replaced by a pair of duck or swan heads, a favourite Hallstatt *motif*, and occasionally these appear in addition to the lugs (*e.g.* Fig. 6).⁵ In size there is considerable variation, the smallest (*e.g.* the two smaller pendants in Fig. 5)⁶ being about 2 cm. long, that is approximately the

¹ The type with the single hole (*e.g.* *N. d. Sc.*, 1888, Tav. iv, Fig. 1), it may be noted, is very similar to a common type of ancient hairpin; see the authorities cited in the footnote on p. 218. On the other hand, ancient nails regularly have large, heavy, circular heads with flat tops—and (R. S. C.) at right angles to the shaft.

² Found at St. Michael (Carniola), Hoernes, *Urgeschichte*, ed. 1, Taf. x, Fig. 20.

³ For both miniature axes and axe-form talismans, see especially the section on *The Decoration of the Double Axe* in the forthcoming second volume of Mr. A. B. Cook's *Zeus* (where full reference to previous works will be found; see in particular von Sacken, *Das Grabfeld von Hallstatt*, 1868, Taf. xii–xiv), Hoernes, *op. cit.*, pp. 440 *sqq.*, Schlem *Wörterbuch zur Vorgeschichte*, pp. 7 *sqq.*, Ridgeway *Early Age of Greece*, vol. 1, pp. 419 *sq.*, 438, 442 *sq.*. It is not unreasonable to suppose that *originally* these miniature axes were used as currency: “such pieces naturally would be buried with the dead or dedicated at shrines” (Ridgeway, *op. cit.*, p. 442). See Ridgeway, *Origin of Currency*, pp. 318, 40, 50. We might even extend this supposition to the Venetic pins themselves (*cf.* Gk. ὀβολός “pin, spike,” and hence “obol, coin,” *id.*, *ibid.*, pp. 310, 345 *sq.*, 349). But the use of miniature axes as votive offerings, together with sundry developments and additions described in the text, gave them a secondary *talismanic* character which persisted after other more convenient forms of currency had been devised; and this talismanic character is what we are chiefly concerned with here. In the same way, the pins too would no longer be regarded as currency.

⁴ From Hoernes, *Urgesch.*, ed. 1, Taf. x, Fig. 26.

⁵ Found near Este; from Hoernes, *ibid.*, Fig. 7.

⁶ Found at San Briceio di Lavagno (about 5½ miles E. of Verona); from Hoernes, *ibid.*, Fig. 24.

same in size as the specimens from Este fastened to the pins (and also, in this particular example, the same in shape and general appearance); others are five or six times this size, and between the two extremes there is nearly every possible gradation of size. Frequently, indeed almost invariably, they are fastened together either in couples, for example, to the metal attachments of a priestly or regal staff (Fig. 1),¹ and to various ornaments or articles of clothing (see more fully below), or else in series and rows so that they would produce a jingling noise as the wearer moved about (*e.g.* Fig. 2 *a-c*).² At Este they were fastened to the pins in pairs or fours.³ The object of this arrangement was no doubt to increase the magical potency of the axe-shaped talisman. A jingling sound—to which Juvenal⁴ (referring, be it noted, to the moon “*in labour*,” that is, eclipsed) satirically likens a shrewish tongue in effect—was supposed to be particularly efficacious in averting evil or at any crisis.⁵ There were other developments of the talismans which seem to have had the same purpose—the favourite duck or swan head, or the characteristic geometric ornament with the symbolic cross (*e.g.* Fig. 7, and less distinctly Fig. 2 *a*), and the small concentric circles, which are generally explained as the prophylactic eye reduced to a conventional form (see especially Figs. 3⁶ and 7), though it must be left to others to say whether such was indeed the origin of this undoubtedly magical symbol. Or instead of the amulet being made in quasi-human form, a rude human figure is roughly sketched upon it to increase its talismanic power, as in an example from Este⁷ with a male figure and another from Romagna⁸ with a female figure. The cross, which, as a comparison with the representation of axes on Roman coins (Fig. 1)⁹ strongly suggests, may have been developed from the lines of the thong by which the celt was secured to the handle, apparently came to be regarded in the anthropomorphic amulets, at least when these took, as they more frequently did, a female form, as breast-bands. It as clearly fulfils this function in the example from Tribano (Fig. 3)¹⁰ (which is only distinguished by this feature from a very similar but incomplete specimen from Este (Fig. 4)¹¹ as does the cross on the bosom of Hera on Samian coins (Figs. 5, 6)¹² and on a prehistoric female figure from Troy (Fig. 2).¹³

¹ Found at St. Margarethen (Carniola); from Hoernes, *ibid.*, Taf. xi, Fig. 2.

² Hochbüchel near Meran; Hoernes, *ibid.*, Taf. x, Figs. 21–23.

³ See, for example, *N. d. Sc.*, 1888, Tav. iv, Fig. 8.

⁴ *Sat.*, vi, 440–443; *cf.* Livy, xxvi, 5, 9; Mart. xii, 57, 15; Stat. *Theb.*, vi, 663.

⁵ See A. B. Cook in *Journ. Hellenic Studies*, xxii, 1902, pp. 5 *sqq.*; *id.*, *Zeus*, vol. i, p. 592 *n.*; and note that the Latin for “amulet” is *crepundiæ* (Apul. *de mag.* 310, 19).

⁶ Austria; Hoernes, *ibid.*, Fig. 19. For the prophylactic eye as an axe decoration, see the reference given, p. 220, *n.* 3 *supr.* to Cook’s *Zeus*, vol. ii.

⁷ Montelius, *Civilisation primitive en Italie*, I (B), pl. 56, Fig. 5.

⁸ *Id.*, *ibid.*, pl. 96, Fig. 11.

⁹ *B.M. Cat. Rom. Coins Rep.*, ii, p. 390, 27–30; iii, pl. 103, 5.

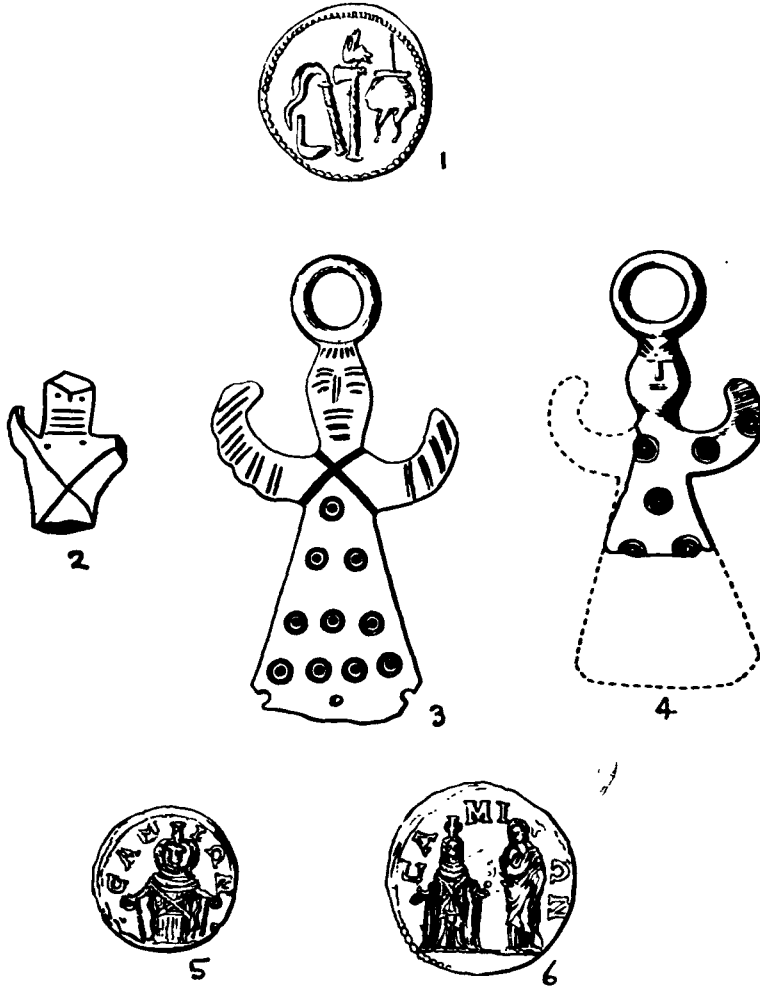
¹⁰ See p. 220, *n.* 4 *supr.*

¹¹ *N. d. Sc.*, 1893, p. 400, Fig. 6.

¹² See Overbeck, *Kunstmythologie* ii, Münztaf. i, Figs. 7, 8.

¹³ Schliemann, *Ilios*, p. 374, Fig. 193; Hoernes, *op. cit.*, ed. 1, p. 171, Fig. 22.

If we may accept Hoernes' view of this cross as possessing some magical value,¹ it is tempting to interpret in the same way the repeated X² on the pins and on the alphabetic tablets offered to Rehtia, and also on certain small bronze plates found in the same excavations.³ We remember that on one pin, instead of the usual X, we found the prophylactic circles;⁴ and on a miniature axe found at Hallstatt we



III.—THE BREAST-BAND ON ANTHROPOMORPHIC AMULETS.

find both cross and tiny concentric circles combined.⁵ We shall see that there are special reasons for associating the breast-band, which the cross on the Tribano

¹ *Op. cit.*, pp. 335 *sqq.*

² Compare for general appearance the repeated cross-band on the statue of Zeus Labrondos as represented on a coin of Mylasa; see A. B. Cook, *Zeus*, vol. ii par. 3 (c).

³ Conway, *Journ. Roy. Anthropol. Inst.*, xlii, 1916, p. 227, n. 5.

⁴ See p. 214 *supr.*

⁵ See Ridgeway, *Early Age of Greece*, i, p. 420, Fig. 72 (von Sacken, *op. cit.*, Taf. viii, Fig. 2).

amulet is undoubtedly meant to represent, with Rehtia, and perhaps it is permissible therefore to hazard the conjecture that this female figure, and the very similar one from Este,¹ are actually attempts at the portrayal of a goddess like Rehtia, and possibly—though this cannot be regarded as very clearly demonstrated—in the Este case, of Rehtia herself.

7. Fastened by rings or chains, and sometimes in very complicated and elaborate groupings, the axe-form talismans were attached to various articles of wearing apparel and adornments, especially to fibulæ,² girdles,³ to a peculiar kind of ornament for the head,⁴ to necklaces,⁵ bracelets (see Fig.),⁶ ear-rings, and so on; and sometimes to horse harness, which is important because it shows that the people of Este used these talismans in connection with their favourite pursuit, which they shared with the *Henetoi* of Paphlagonia, namely horse-racing. On the analogy of all these usages, we should conclude that our specimens from Este are really axe-form talismans attached to some article meant for personal use or adornment rather than to building



IV.—BRACELET (WITH PENDANT AXE-SHAPED TALISMANS) FROM ESTE
(N. D. SC., 1882, TAV. IV., FIG. 34).

materials, in short to pins rather than to nails. The very object which the pair of talismans was meant to achieve, that is, to ward off evil by their jingling sound as the wearer of them moved about, would be defeated if they were suspended from a nail, of which the proper use is to be driven home hard and fast. But suspended from a hairpin that secures a lady's hair, at every move of her head they would fulfil that purpose. Nor is there anything strange in a pin carrying an inscription; there is a silver pin in the British Museum from the Argive Heræum dedicated to

¹ See nn. 10, 11, p. 221 *supr.*

² Montelius, *op. cit.*, I (B), pl. 83, Fig. 10; cf. Forrer, *Real-Lexicon*, Taf. 84 (p. 328), Fig. 9.

³ Forrer, *op. cit.*, Taf. 82 (p. 326), Fig. 8.

⁴ Montelius, *op. cit.*, I (B), pl. 49, Fig. 16 (from a district called *Polesine*, between the Po and the Adige).

⁵ *Id.*, *ibid.*, pl. 54, Fig. 10 (from Este); cf. Pasqui, *Mon. d. Lincei*, iv, 1894, p. 490 (from Narce).

⁶ Montelius, *op. cit.*, I (Texte), p. 292, Fig. f (from Este), and *N. d. Sc.*, 1882, Tav. iv, Fig. 34 (from Este).

Hera, and inscribed in archaic alphabet $\tau\hat{\alpha}\varsigma\text{'}\text{Ηρα}\varsigma$ ¹; and from the analogy of inscribed mirrors, fibulae and *cistae* ("jewel-boxes"), it would not be unreasonable to argue that all such articles of female toilet might also carry inscriptions. Although we need not imagine that the talismans of the form fastened to the Este pins were still thought of as "axes," it may be pointed out that there is substantial evidence for the use of an axe-head as part of the decoration of the heads of hairpins; for example, we may note a gold hairpin from the necropolis of Koban (S. Russia),² or the electrum pin-heads decorated with tiny double-axes from the Artemisium at Ephesus.³ There is no reason therefore to hesitate in identifying the objects found in the excavations of the temple of Rehtia at Este as hairpins with pendant axe-form amulets.

8. In his paper, six years ago, Professor Conway⁴ discussed fully the close parallelism of *Rehtia* and the Spartan goddess Artemis *Orthia*, not only in name but also in characteristic votive offerings, and now, I think we may add, in functions also. It is not necessary to repeat here the evidence which was then submitted in detail; but one or two points may be recalled, and, with some additional ones, further emphasized. An important fact connected with the pins dedicated to Rehtia must be carefully noted. Out of the 200 odd extant bronze specimens only nineteen contain an articulate inscription, and of these two were dedicated by the same person; we are left therefore with eighteen worshippers, of whom only one is almost certainly a man (or at most two).⁵ Clearly *this type of offering was made all but exclusively by women*. Now large numbers of bronze pins have been found in shrines of Artemis Orthia, both at Sparta and elsewhere, though in no case do they show the same remarkable features—the rectilinear ornament and the axe-form amulets fastened by means of rings and chains—which specially distinguish the pins of Este. The Greek specimens are usually round, somewhat shorter, and have heavy, lumpy heads. This, however, is a small difference; we have already seen that votive offerings, for any special reason—in this case in order to provide space for the dedicatory inscription—may depart from the usual style, and be developed into a specialized votive type. In Greece, pins, both hairpins and pins used for garments, were a favourite form of votive offering made by women to their special divinities at the time of childbirth.⁶ Herodotus⁷ tells us that women of Argos and Ægina were in the habit of dedicating pins (*περόνας*), presumably to Hera and Aphaia

¹ F. H. Marshall, *B.M. Cat., Jewellery*, pl. xiv, No. 1250; Waldstein, *Argive Heræum* ii, p. 339, pl. cxxxvii.

² Kondakof-Tolstoi-Reinach, *Antiquités de la Russie méridionale*, p. 459, Fig. 402. (Hoernes, *Urgesch.*, ed. 1, p. 472, n. 5.)

³ Hogarth, *Excavations at Ephesus*, p. 101, pl. 6, 15 and p. 29, pl. 10, 47.

⁴ See p. 212 *n.* for reference.

⁵ Conway, *l.c.*, p. 225; for a woman as dedicator of an alphabetic tablet to Rehtia, *id.*, *ibid.*, p. 227.

⁶ The evidence is collected by Rouse, *Greek Votive Offerings*, pp. 252 *sqq.*, whence my examples are taken.

⁷ v. 88.

respectively, both of them protecting deities of women in labour. From the shrine of Artemis *Hemera* ("the Gentle") at Lousoi in Arcadia, where her cult was a flourishing one in the sixth century B.C., comes a great variety of women's ornaments including pins, ear-rings, fibulæ and diadems.¹ The inscribed silver pin dedicated to Hera, now in the British Museum, has already been noted;² another one in gold dedicated to Aphrodite was found at Cyprus.³ From the Argive *Heræum* and from the temples of the gods of Healing, Asklepios and Apollo, at Delos come fibulæ, pins, rings, bracelets, necklets, ear-rings, head-bands and the like in abundance.⁴ Similar offerings and also hair-nets, girdles, and breast-bands, accompanied by a prayer for safe delivery addressed to Hera, Artemis or Eileithuia, are recorded in the poems of the *Anthologia Palatina*.⁵ The offering of pins and other articles of personal use by women is a close, but not quite perfect, analogy to that of his arms by the veteran, of his net by the fisherman, of his flute by the shepherd, and of his lyre by the poet. Since it was so common for women to offer pins to various goddesses in Greece, it is a safe inference to conclude that the objects found at Este, chiefly dedicated by women, are also pins—of a specialized votive type.

9. Now *Orthia* is expressly described as the "Restorer," or as a healing deity who restored "women to health after childbirth and preserved their infants," and as such she was at Epidauros associated with Asklepios Orthios.⁶ It is interesting, too, to compare *Orthia Lygodesma*⁷ "the willow-bound" at Sparta, since the willow was supposed to possess special properties connected with women's ailments. But *Rehtia*, we remember, is called *š a h n a t e h* (dat. sg.)⁸ "the Healing (One)"; and on the alphabetic tablets the word *a k e o*, apparently cognate with Greek *ἀκείουαι*, "cure, heal," is repeated, in the complete specimens, sixteen times.⁹ In view of the

¹ *Jahreshefte d. ost. arch. Inst. in Wien*, iv, 1901, pp. 49 *sqq.*; miniature votive axes with prophylactic eyes were also found in the same excavations.

² See p. 224, n. 1 *supr.*

³ *Journ. Hellenic Stud.*, ix, p. 223, pl. xi.

⁴ See the references given by Rouse, *l.c.*

⁵ vi. 270–276, 200 *sq.*, *cf.* Theocr. xxvii, 54, Rouse, *l.c.* *Cf.* an interesting suggestion made by Rouse, that the supposed "baker-woman" of Cræsus dedicated at Delphi, Hdt. i, 51, was really his queen; Rouse rightly emphasizes the mention of *girdles* in the same connection.

⁶ Conway, *l.c.*, p. 229. See Schol. vet. Pind. *Ol.*, 3, 54, Schol. rec., *ibid.*, Tzetz., *Lyk.* 1331; for Artemis *Orthia* and Asklepios *Orthios* at Epidauros, see *I.G.*, iv, 1050, 1195, 1196, 1261.

⁷ See Roscher, *Lex.*, s.v. *Lygodesma*; compare the parallel case of Hera at Samos, and for the two see the forthcoming second vol. of Cook's *Zeus*.

⁸ The corresponding nom. (plu.) seems to be preserved in Latin only in the quasi-tribal name *Sanates*. Paul. ex. Fest., p. 475 L., Fest., p. 426, 474 L., Gell. xvi, 10, 8.

⁹ I relegate to a footnote two suggestions which seem to me attractive and reasonable, but cannot (as yet) be proved: (1) that *·u·zerofo·s·* on a pin (Pauli No. 21, Conway 31), lit. "(ex) uberibus" *i.e.* "from the first-fruits," may possibly have some reference to child-bearing, and (2) that *·o·posofo·s·* on an alphabetic tablet dedicated by a woman (Pauli 8, Conway 1), lit. "(ex) operibus" may perhaps be "after the toils of labour," *i.e.* as if in Latin *opus* in the sense of *opera* (f. sg.), which is commonly used by Latin authors in the same sentence or phrase as *labor* and is almost synonymous with that word. For the plu., *cf.* in Gk. *ὀδύσσει*, Pind. fr. 88 (Bergk.). In any case both words denote the occasion of the offering.

apt parallel in name and other respects between Orthia and Rehtia, it is likely that the healing functions of the two were also the same, that is, that they were both, Rehtia as well as Orthia, goddesses of motherhood and childbirth. But we can find other evidence pointing to the same conclusion. We know that it was the custom at Rome for women during pregnancy or in labour to loosen all knots and fastenings about their clothing or hair when paying their vows to or supplicating the help of Juno—especially under the name *Lucina*;¹ the very numerous examples of this or similar requirements during pregnancy and confinement, collected by Sir James Frazer² from different peoples all over the world, show that this condition, which no doubt originated from ordinary clinical reasons, came to be thought necessary to secure the safe and easy birth of the child—a knot or fastening anywhere, it was thought, would complicate matters. Juno again, as *Cinxia*, was the presiding deity of the bride's girdle,³ which was tied in the *nodus herculaneus*,⁴ and might well therefore require the aid of the goddess to unfasten it. But since women had to unloosen their hair and dress when addressing their prayers to their protecting goddess, it would surely be appropriate for them to offer their dress- or hair-pins (or votive objects imitated from these) to the local goddess of motherhood and childbirth on such occasion. If, and in so far as the view taken in this paper of the Este offerings as pins and talismans of a common Hallstatt type is correct—and the archæological evidence goes to show that these dedications are *prima facie* to be assigned to the close of the Hallstatt period and the beginning of the Keltic or La Tène period at Este—then the offerings would imply a magical purpose, to safeguard, no doubt, both mother and unborn child during the period of gestation, and to secure the well-being of both after the confinement. It is tempting to see further in the cross (X), which we have repeatedly seen was the favourite symbol of Rehtia, a recollection of the breast-band which, it has already been shown, might be a suitable offering to Rehtia, and would be unfastened on occasions when women paid their vows to her. In the case of Orthia Lygodesma and of Hera at Samos the breast-band was perhaps associated with the osiers which were bound round the statue to keep it in position. If the view is right which regards the cross on prehistoric monuments as a magical symbol, it would appear that in course of time the breast-band, which, on the Tribano figure at least, seems to have been developed from the lines of the thong used to bind axe-head to the handle, had passed into a conventional magical symbol and was readapted to suit the pin. This would be in keeping with the prophylactic circles on one of the Este pins and with the axe-form talismans

¹ Serv. Verg. *Aen.*, iv, 518, Ovid *fasti* iii, 257 *sqq.*; cf. Paul. ex. Fest., p. 248 L., Gell. iv, 3, 3.

² *Golden Bough*, ed. 3, Part ii (vol. iii), "Taboo and the Perils of the Soul," pp. 203 *sqq.*

³ Paul. ex. Fest., p. 55 L., Arnob. *adv. nat.*, iii, 25, 30, Mart. Cap. ii, 149, Myth. Vat. iii, 4. (*Cinxia*); cf. Theocr. *Id.*, xvii, 6.

⁴ Paul. ex. Fest., *l.c.*

fastened originally to most if not to all of them. Let us pursue a little further the comparison of Rehtia and Juno: with *ś a h n a t e h* and *a k e o* we can obviously compare such epithets as *Lucina*, the goddess of motherhood (literally, "the bringer of the light of day," that is, to the newly-born child), *Februa* and *Fluonia* "the purifier" and *Sospes* "the preserver." All these epithets, as I hope to show elsewhere, are connected with the functions of Juno as the great Italic goddess of motherhood and childbirth. It would be a simple step in the development of Rehtia, as it was of Juno, to become a saving goddess of both sexes and of all classes; at Rome special sacrifices were offered to Juno at times of national distress, in order to gain respite for the whole community from its difficulties present or indicated as imminent by dread portents.¹ One at least of Rehtia's chief functions, then, is to maintain or to restore physical health—the soundness, fitness, *rightness* of the body; she raises it to an upright position after sickness and pain.

10. Now there was a temple in the country of the Veneti, not far from Patavium (Padua), ascribed to Juno, and said by Livy² to have been ancient already in 302 B.C.—the year in which the event he is there relating took place—that is to say, eighty-four years before the planting of the colonies of Placentia and Cremona, which may be taken to mark the beginning of the Romanization of Transpadane Gaul. From Vergil³ we learn of a cult of Juno in the same district, and it may be that the poet is actually referring to the same cult as Livy; according to Strabo⁴ this cult amongst the Veneti was Greek—a (temple and) grove of the Argive Hera. But, as in the very similar case of Falerii,⁵ there is a tradition of "Pelasgians" landing in Italy in this region, who were said to have come from Epirus after having been expelled from Thessaly.⁶ In neither Epirus nor Thessaly, however, so far as I can find, is there any trace of an ancient cult of Hera to which reference could be made to explain Strabo's assertion respecting the nature of this cult amongst the Veneti. It is not, however, unreasonable to believe that these "Pelasgians," like the Veneti amongst whom they are said to have settled (and who not only are demonstrably a tribe closely akin to the ancient Illyrians, but also seem to have long preserved a matrilinear system of nomenclature⁷ as well as a peculiar marriage custom, both of which are regarded as connecting them with the early Mediterranean stratum of

¹ Cf. especially the custom of instituting *lectisternia* (in honour of Juno, and sometimes of other gods and goddesses) at Rome at times of pestilence or famine. See my essay on Juno to be published shortly elsewhere.

² x, 2, 14.

³ *Georg.*, iii, 531 sq.

⁴ v, 1, 9 (p. 215 C).

⁵ For this I must again refer to my forthcoming paper on Juno.

⁶ Dion. Hal., i, 17–18; Ridgeway, *Who were the Romans?* p. 15.

⁷ Conway, *l.c.*, p. 225; and for the ethnology and marriage custom, Hdt., i, 196, Conway, art. *Veneti* in *Enc. Brit.* (ed. 11).

population, and the marriage custom as characteristically Illyrian),¹ worshipped a goddess with functions similar to those of the Venetic Rehtia, the Italic Juno, the Spartan Orthia, and the Argive Hera; and that later observers like Livy (himself a native of Padua) or Strabo, familiar with both of the more famous Roman and Greek cults of Juno and Hera, noted the similarities between these and the Venetic cult, and therefore regarded them as essentially the same, if indeed we are not further to conclude that, with the extension of both Greek and Roman civilization by the times of these two historians, an actual identification had taken place of cults, which, perhaps, had more in common in their origins than we can now trace with precision.

ADDENDUM.

A visit made in March, 1922, to the Museo Nazionale at Este, where the objects found during the excavations carried out on the *Fondo Baratela* are now preserved, has enabled me to reconsider the theory of the so-called "nails"² which I had advanced in the paper here printed. (In passing let me say that my reading of the two inscriptions quoted on p. 214 above—amongst others—fully confirms Professor Conway's text which is given there.) No one, I think, who has examined the Baratela collection *as a whole* will hesitate to conclude that we have to deal with a specialized votive type of pin. There is a whole case full of pins from the same site which are labelled *pins (spilli)*, and many others in the same case as the larger and heavier objects labelled *chiodi*, which, if taken alone, would undoubtedly be called pins (*e.g.*—I quote the numbers attached to them in the museum catalogue—Nos. 9291, 9428, 9441, 9508, 9510–13, 9516, 9518), so that although the first sight of the large thick bronze specimens, and even more so of the iron ones, might easily lead the observer to classify them as "nails," we must allow the possibility (as I think, probability) that they are really a special type of pin made for votive purposes. I observed a number of pins, almost as thick, though shorter, in the Etruscan Museum of the University of Perugia. But the nails of Nortia on the other hand, to be seen in the Museo Archeologico at Florence, are entirely different. They are square *clavi trabales*, as Horace called them, a foot long and not less than an inch thick at the top, with huge flat heads. Even the most casual glance at these nails would deter an observer from comparing them with the Este pins (so-called "nails"), though it is only fair to add that this comparison, made by Dr. Giles and accepted by Professor Conway, was not based by them on an actual examination of either set of objects.

¹ By Professor Sir Wm. Ridgeway, *Who were the Dorians?* (1907), p. 298 (in *Anthrop. Essays pres. to E. B. Tylor*, Oxford, 1907).

² I may mention here a recent discussion of these objects by Bellucci *I Chiodi nell' Etnografia antica e contemporanea* (Perugia, 1919), p. 60, where the old view is restated, but no fresh light thrown on the cult of Rehtia. The Este objects, however, are quite unlike the (undoubted) nails from other localities with which Bellucci seeks to compare them.

I noticed further that besides many scores of pins (the *spilli* referred to above), rings, bracelets and fibulæ also have been found in considerable quantity on the Baratela site, just as at Lousoi (shrine of Artemis *Hemera*), at Argos (the *Heraeum*) and at Delos (temples of Asklepios and of Apollo), so that the suggestion made on p. 225 above is in some degree strengthened. As for the small pendants attached to the pins, the large numbers of precisely similar objects which I noted both at Este and elsewhere (in particular at Florence and Bologna) attached to bracelets, necklaces, ear-rings, or arranged in rows or series, leave no doubt at all in my mind that my identification of the Este specimens as talismans is correct. A number of those which I saw at Bologna were made of bone.¹

I am indebted to the Rev. Canon Lonsdale Ragg, Warden of the Church Hostel, Bangor, for a reference to F. C. Hodgson's *Early History of Venice* (London, 1901), pp. 113 *sqq.*, where the strange medieval ceremony of the "Brides of St. Mark's" is fully described, together with an account of the legend on which it was supposed to be based. I am inclined to believe that in this ceremony there may perhaps be a survival of the marriage custom of the ancient Veneti described by Herodotus (see above).

The second class of votive offerings made to Rehtia—the alphabetic tablets—still awaits explanation; the riddle of Rehtia's cult will not have been completely read until there is a solution forthcoming which will cover both the tablets and the pins and talismans.

¹ Schlemm *Wörterbuch*, p. 7, mentions only bronze, iron and tin as the usual materials.

NGALA, AND ITS DEAD LANGUAGE.

By F. W. H. MIGEOD.

NGALA lies about twenty-eight miles north-north-east of Dikwa on the south side of Lake Chad, from which it is distant some ten miles. The soil is all "firki," or dark grey, nearly black, clay, which is flooded in the rains, and in the dry season is cracked all over with deep fissures. Sand dunes up to about 20 feet high stand out like islands, and nearly every dune is or has been occupied by a village. It is on such an island that Ngala stands.

On the "firki" a dry-season corn called maskwa (*Andropogon cernuum*) is planted as soon as the water has subsided about October, the seedlings having been already started in little plots; and the crop is reaped in February and March. Wherever there is a little sandy covering to the mud, cotton is grown, and on this soil acacia trees of several varieties also flourish.

The earliest legendary record of the site is that it was inhabited by the So. The Ngala came from the east and drove them out, and they went into the lake, but the place where the refugees settled has since been covered with water. Ngala in time grew into an important place with, it is said, as many as ten thousand inhabitants. In 1900, however, Fatarella, son of Rabeh, fought against the place. It has not yet recovered, and in 1921 the population was less than nine hundred.

The Ngala claim to have migrated from Yemen in Arabia, a claim all the tribes in Bornu make. It means little more than that a few Arabs arrived with a miscellaneous following of negro slave-soldiers collected on the way, which is what Rabeh did. Nevertheless the claim points to the fact that the Chad region has from most ancient times been in communication with the upper Nile, and since the Mohammedan upheaval, if not already earlier, with Arabia. Seeing that so many tribes state they were not Mohammedan when they came, it may be assumed that many of the migrations were of people who refused to accept Mohammedanism and sought refuge in the west. If this view cannot be taken, then the migrations must be assigned to a far earlier date.

After Yemen, where the original family of Ngala was called Geirani, the next place they appear at is within measurable distance of their present town. They were at Fitri, and claim to be brothers of the Bulala. Then they moved west in stages as follows: (1) Fitri, (2) Worio, north-east of the present Fort Lamy, (3) Ngala, near Gulfei, (4) Gambaru on the Albeit river, and (5) the present Ngala, which they reached about 350 years ago. That this last estimate is not very far

wrong is supported by the statement made to me at Mongonu, several days north-west, to the effect that when 480 years ago the So were conquered by the Sultan of Bornu, many of them fled to Ngala, which they would not have done in all probability unless it was still inhabited by their own countrymen.

The Ngala formerly had no face marks, but now cut the vertical Kanuri marks. They brought no cattle with them; and only became Mohammedan in their present locality.

Of relics of pre-Ngala days there are the huge water-pots left by the So. They are most of them broken, but many that are left still hold water in the unbroken part. They stand near the wells, and are largely used as troughs for the animals. In the rest-house compound is a complete one. It is about 4 feet high and about 3 feet in diameter. The mouth is almost the full width of the pot, and round it is only a small lip. The thickness of the sides is as much as 2 inches. It is still perfectly sound in the at least three hundred and fiftieth year of its age. Everything the ancient So did seems to have been on a big and solid scale.

Besides pots there are found spherical stones, with two sides flattened, and about 2 inches in diameter. They are found in other ancient So towns also, but their use is not known to the Ngala. At Kaza, a neighbouring town, I was told the inhabitants now use them to plant with the corn, so as to ensure a good crop. They are then dug up and used again. Possibly the Ngala put them to the same use, but I was not so informed.

The town of Ngala is surrounded by a now very ruinous mud wall, said to have been built by Mai Bura, the first Mai, *i.e.* king. The houses are round, with mud walls and grass roofs, either rounded off on top or peaked. The old houses of the more important people and the Mai's house are all square shaped.

The Chief's house was practically a fort within the town wall. The bulk of it is now a heap of ruins, and inside one of the great heaps I was told there was a buried chamber, presumed to be still intact. Nevertheless there is still a habitable portion on the south side. The main gate is the principal feature. The big door opens into a small room or porch. In the almost collapsing lintel or roof is a pot with the bottom knocked out. There was formerly a room over the gateway, and there they said an old woman used to sit and watch who passed in and out of the gate. The fact of there being upper storeys indicates that the Mai of Ngala held a high rank in the old Bornu empire. The privilege of an upper storey was very restricted. Now the Mai, though of ancient lineage, is a small man. He takes his orders from a Kaigama, *i.e.* District Head, who is an ex-slave.

Inside the gate on the south side is a flight of some half-dozen steep steps with a mud seat at the top backing against an inner wall. Here in the old days the Mai used to sit and hear disputes.

Passing behind this, in a tiny walled yard, was a small wooden door. Inside was a small square room. Another small room leads out of it on the left, the latter

only being lighted by a hole high up in the wall. These two cells are practically in the thickness of the outer wall, and from outside I found the light hole high up, almost at the top. At the present day they are used for storing corn, and some sitting hens were also inside. In them a century ago once lodged Shehu Lamino. It was he who, by defeating the Fulani, became the *de facto* ruler of Bornu; but it remained for his son Shehu Umar to put an end to the ancient line of sultans, then become effete. It is a dynasty of Shehus that now reigns in Bornu.

These two rooms, the Mai said, had never been repaired since, and the timbers supporting the mud roof are still quite sound.

I was also shown the room of Mariam Aissa, daughter of Mai Mele, the present Mai's great- (or great-great-) grandfather. She was married to Shehu Lamino, and her father gave her for a dowry a thousand slaves, besides cattle. I asked the Mai if he could give such a dowry now. He said he wished he could. Shehu Lamino divorced Mariam Aissa later, but not till she had borne him two sons, Aba Yusuf and Abubakar, and a daughter, Nana Roiya, all of whom are said to have descendants.

The Mai's own room is circular, about 20 feet in diameter, and stands by itself. With the exception of renewing the grass roof, he said it was just as it used to be 260 years ago, when presumably it was built. It is entered from a very small courtyard after passing through two or three other yards and turning corners. Inside on the right is a large mud bed about a foot high. The Mai said he never slept there, as it was haunted. He slept on a mat on the opposite side of the room, with a skin laid on top of it. The skin was of a red hyæna of the striped variety. There was very little else inside the room but a saddle and it was evidently not swept daily. In one of the little yards was a well-grown ficus tree.

In the old days, when a Mai was elected, if he was not the eldest son of the family, his elder brother or brothers were buried alive in the walls of the palace, standing upright. An inverted pot, not very large, was shown me in one place. It was partly buried, appearing to have weathered out. They said it covered the head of one of these sacrifices. The next day I was able to confirm the accuracy of these statements, for, in examining the outer wall on the outside, I found the outline of a human skeleton and asked about it. It was in the western wall on the south side of the gate which faces west, as do the gates of all chiefs' houses in Bornu. Then more information was forthcoming. The Chief said it was the elder brother of an earlier Mai, but did not say which, who, on the election of his younger brother, had been promptly seized, bound, and buried standing up. There is a pot over his head, and also under his feet, but the distance between the two only measures about 4 feet. That this is due to the collapse or settling of the wall is probable, as the topmost bones seemed to be vertebræ. The outline of the skull I could not trace, even by scraping the surface. If the head was not buried straight away, but only covered with a pot, and then the earth put over, it would probably have bowed down

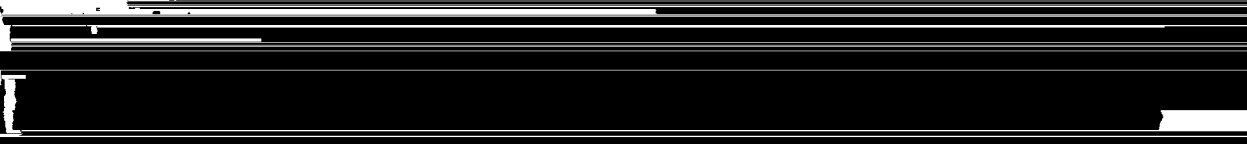
when the victim suffocated. I rather formed the impression it was the back of the skeleton I was looking at.

Also buried in the ground on the ruined walls were many small earthenware pots full of the round stones I have mentioned above. In this connection, it must not be overlooked that in a country where there is no rock at all, any stone would be an object of curiosity to persons who had never travelled and seen a stone.

On inquiring where the Ngala kings were buried, I was first told in the bush beyond the walls, but later, perhaps because I showed no disposition to dig up everything that was shown me, a mound was pointed out opposite the gate and between that and the outer wall of the town.

Objects of interest did not end with the Mai's ruined palace. At the northern gate of the town there is a group of wells which are 11 to 12 fathoms deep. Just inside the wall in a slight hollow is a baobab tree of a diameter of about 4 feet. There are none in the surrounding country, but a few of smaller size grow in the town. My attention was drawn to this particular tree, and I was told that it had grown out of the head of a certain celebrated man named Kamata who was buried there 300 years ago. He was widely known, but not a chief, only head of a section of the town. The explanation of the tree is that no doubt someone planted a seed there unknown to the town generally.

In telling me that the outer wall was built by Mai Bura over 300 years ago, the additional statement was made that the walls were older than this baobab tree, which is interesting as a fact bearing on the rate of growth of baobab trees, to some



It was northerly from the Mai's palace, and close to the south wall from which the Mai's palace is not far distant. There is clear ground there now, but three young kurna trees roughly mark the place. Owing to its reduced population there is now much vacant land in the town.

The Mai, by name Mustafa, is a tall man with a high and rather narrow head, but it did not seem to me that this is a common type in Ngala. Biggish noses seem common, however. Mai Mustafa tried to give me a list of all the Mais of Ngala from the date of their first arrival. He complained that Fatarella took the list when he sacked the town. I wrote down a list from his dictation. There were twenty-one Mais before him. He had been deposed, and after six others had been tried he had quite recently been restored. Then he tried to write them down in Arabic character, but only made twenty-four in all, including himself when restored. Both lists (given below) are presumably inaccurate, because he has only four names in all the long period before Mai Mele, who gave his daughter to Shehu Lamino, which is an approximately known date, between 1809 and 1835, when he died. A reign of fifty years each to the first four Mais would be unlikely.

I think the first list is the more exact, for the following reasons. He distinctly said there were two Tahirs, whereas his own written list only contains one. Further, Mele II and Galama Ali, who have a definite note attached to them, are wanting in the list he wrote himself. Further, the recent names are incorrect or out of order. He was, therefore, more accurate when he called them out rapidly, and I took them down without a check. The labour of writing them broke the train of memory.

He himself has a son and three daughters.

The old language of Ngala was related to the Makari farther east. Only two old men and one woman are left who know it, and the Mai only knows a very few words. The present language is Kanuri. These two old men gave me the words in the attached list. Their names are Ladan Braima, aged, perhaps, 81, and Mahman Tahir, aged 73. They are cousins, and the fathers and mothers of both were pure Ngala. I worked out their ages from the statement of the elder that the younger was born eight years after him, and that he himself was born five years before Shehu Umar became sovereign of Bornu (in 1846). There is, however, a factor of doubt in this, for Shehu Umar succeeded his father Shehu Lamino as Shehu in 1835, but he was still nominally acting for the sultans, the last of whom was killed in 1846. Both of these old men may therefore be, and probably are, eleven years older, *i.e.* 92 and 84 respectively (1922).

They told me that the Germans some years ago took down a vocabulary, and that there were then five men alive, including themselves, able to supply information. Whether this vocabulary is published or not I cannot say.

One last item of archæological interest I must mention in connection with Ngala. In visiting the indigo dye pits I saw in an adjoining shed the dyed garments being beaten with mallets to give them a gloss, and I was greatly surprised to see

lying there a very large neolithic axe head, measuring some 6 by 4 inches at least. I inquired what it was for, and was shown how it was rubbed on the cloth like a flat iron to give it a final polish. This use almost throws doubt on the assumption that these larger implements of axe shape were axes at all, and it almost suggests that the flattened spherical stones may have been formerly put to a similar use and made for the purpose. Of course, it may have simply been a case of putting an unknown handy object which had been found to some use for which it was reasonably suitable. Still, against this must be set the conservatism of technical handicraftsmen who like their accustomed tools and nothing else. I regretted I was unable to make an exhaustive inquiry into the matter.

APPENDIX I.

LISTS OF THE MAIS OF NGALA.

LIST A, as dictated to me by Mai Mustafa.

Bura. First Mai. Built the town wall.
 Tahir I.
 Idirisa.
 Tahir II.
 Mele. Gave daughter to Shehu Lamino.
 Kalagiri.
 Daudu.
 Moso.
 Alifa
 Yerima.
 Ibraim
 Mele II. Brother to Lamino's wife.
 Galama Ali. Maternal grandfather to Mustafa.
 Shehu.
 Bukar.
 Abdul Kadir.
 Setima.
 Kali.
 Ali.
 Umar.
 Shehu. Put by Rabeh. Son of Ibraim, who was not Mai.
 Mustafa. Present Mai. Deposed.
 Ali.
 Ngoni.
 Chiroma.
 Ali.
 Bukar.
 Malam.
 Mustafa. Restored.

LIST B, as written by himself in Arabic characters in my presence.

Bura.
 Tahjr.
 Mele.
 Idirisa.
 Daudu.
 Kalagiri.
 Yerima.
 Alifa.
 Bura.
 Ali.
 Moso.
 Abdulkadir.
 Setima.
 Shehu.
 Ali.
 Umar.
 Shehu.
 Bukar.
 Ali.
 Ngoni.
 Chiroma.
 Malam.
 Mustafa.

APPENDIX II.

NGALA LANGUAGE.¹

NUMERALS.

1	...	...	...	...	...	...	...	Tiksang.
2	...	...	...	...	...	...	...	Kisang.
3	...	...	...	...	...	...	...	Kinga.
4	...	...	...	...	...	...	...	Kadi.
5	...	...	...	...	...	...	...	Kishenshi.
6	...	...	...	...	...	...	...	Kingi ti kisang.
7	...	...	...	...	...	...	...	Tiksang ala gada.
8	...	...	...	...	...	...	...	Kadi kadi.
9	...	...	...	...	...	...	...	Ina tiksang.
10	...	...	...	...	...	...	...	Hakang.
11	...	...	...	...	...	...	...	Hakang a tiksang.
12	...	...	...	...	...	...	...	Hakang a kisang.
20	...	...	...	...	...	...	...	Hakan ti kisang.
30	...	...	...	...	...	...	...	Hakan ti kingu.
40	...	...	...	...	...	...	...	Hakan ti kadi.
100	...	...	...	...	...	...	...	Hakan ti hakan.

(Final "g" uncertain.)

HUMAN BEINGS.

Man	...	...	...	...	...	...	Boloswi.
Two men	...	...	...	...	...	...	Mawo kisang.
Old man	...	...	...	...	...	...	Bolosa gilku.
Young man	...	...	...	...	...	...	Kokonoro.
People	...	...	...	...	...	...	Moi.
Woman	...	...	...	...	...	...	Kinum ² or Ginum.
Two women	...	...	...	...	...	...	Ginum tu kisang.
Many women	...	...	...	...	...	...	Ginum kadagu.
Boy	...	...	...	...	...	...	Wula.
Girl	...	...	...	...	...	...	Muda.
Father	...	...	...	...	...	...	Aba.
Uncle	...	...	...	...	...	...	Abandisa.
Brother	...	...	...	...	...	...	Katena.
Son	...	...	...	...	...	...	Husu.
Grandfather	...	...	...	...	...	...	Kaga (Kanuri).
Mother's brother	...	...	...	...	...	...	Rafa (Kanuri).

¹ Barth's version may be found in *Notes on Some Languages of the Western Sudan*, by P. A. Benton.

² Pronunciation varied from Ginūm, Ginŭm to Ginem.

Mother ...	...	...	...	...	...	...	Ya.
Father's sister	...	...	...	...	...	...	Baba.
Mother's sister	...	...	...	...	...	...	Igina (Kanuri).
Sister ...	...	...	...	...	...	...	Katena.
Daughter	...	...	...	...	...	...	Wutu.
Grandmother	...	...	...	...	...	...	Kaga (Kanuri)
King, Chief	...	...	...	...	...	...	Mai (Kanuri)

ANIMALS.

Bird	...	...	...	...	...	...	...	Zeli.
Bull	...	...	...	...	...	...	...	Dungu.
Cattle	...	...	...	...	...	...	...	Sha kadagu (many).
Camel	...	...	...	...	...	...	...	Logomi.
Cow	...	...	...	...	...	...	...	Sha.
Dog	...	...	...	...	...	...	...	Kěľě.
Dogs, two	...	...	...	...	...	...	...	Keleni.
Donkey	...	...	...	...	...	...	...	Galtan gida (?).
Elephant	...	...	...	...	...	...	...	Ambu.
Fowl	...	...	...	...	...	...	...	Kusku.
Fowls, two	...	...	...	...	...	...	...	Kuskunu.
Goat	...	...	...	...	...	...	...	Mfu.
Fish	...	...	...	...	...	...	...	Chi.
Hippopotamus	...	...	...	...	...	...	...	Nai.
Horse	...	...	...	...	...	...	...	Boskom.
„ female	...	...	...	...	...	...	...	Boskom ginem.
Iguana	...	...	...	...	...	...	...	Legu.
Hyæna	...	...	...	...	...	...	...	Mali.
Jackal	...	...	...	...	...	...	...	Kele di lala = dog of bush.
Leopard	...	...	...	...	...	...	...	Riga.
Lion	...	...	...	...	...	...	...	Albani.
Monkey	...	...	...	...	...	...	...	Agobali.
Sheep	...	...	...	...	...	...	...	Tumu.
Snake	...	...	...	...	...	...	...	Sengu.

PARTS OF THE BODY.

[illegible]

HEAVENLY BODIES, ETC.

Sun	...	...	...	...	...	...	...	Su.
Moon, month	...	...	...	...	...	...	...	Tedi.
Star	...	...	...	...	...	...	...	Cha (?).
Sky	...	...	...	...	...	...	...	Rho.
Fire	...	...	...	...	...	...	...	Fu.
Water	...	...	...	...	...	...	...	Am, ūm.
Rain	...	...	...	...	...	...	...	Am.
Wind	...	...	...	...	...	...	...	Shi.

TERRESTRIAL OBJECTS.

Bush, forest	...	...	...	...	...	...	Lala.
Flat country (firki)	...	...	...	...	...	...	Tüm.
Road	...	...	...	...	...	...	Ngül.
Sand	...	...	...	...	...	...	Kalasa.
Town	...	...	...	...	...	...	Sugu.
Tree	...	...	...	...	...	...	Wadagei.
Two trees	...	...	...	...	...	...	Wadagei kisanğ.

FOOD.

Corn, Guinea corn	...	...	...	...	...	...	Dama.
,, maskwa	...	...	...	...	...	...	Dama.
,, maize	...	...	...	...	...	...	Masar.
,, millet	...	...	...	...	...	...	Dama.
Date	...	...	...	...	...	...	Divino (Kanuri).
Egg	...	...	...	...	...	...	Yeshi. Many eggs (Yeshi Kadagu).
Honey	...	...	...	...	...	...	Mūm.
Meat	...	...	...	...	...	...	Shu.
Milk, sour	...	...	...	...	...	...	Yeni.
,, sweet	...	...	...	...	...	...	Inini sama.
Rice	...	...	...	...	...	...	Kodo (?).
Salt	...	...	...	...	...	...	Mana tile.

PERSONAL ATTIRE.

Cloth Luku.

MISCELLANEOUS NOUNS.

[illegible]

VERB "TO BE."

What is your name	...	...	...	...	...	Yekó simsá.
This cloth is mine	...	...	...	...	...	Luku sa ntu.
This cloth is Momo's	...	...	...	...	...	Luku sa Mamang.
Dikwa is far	...	...	...	...	...	Dikwa zigili.
This is a strong man	...	...	...	...	...	Bolosa kakagaseng.
This man is not strong	...	...	...	...	...	Bolosa kakagaseng wa.
This thing is big	...	...	...	...	...	Manta na dima.
This thing is small	...	...	...	...	...	Manta na cha.
That is a big town	...	...	...	...	...	Wuta wuta dima (?).
The water in the well is not sweet	...	...	...	...	...	Um di tili wa (? "in the well" omitted).
This is mine	...	...	...	...	...	Aguntu.

VERB "TO GIVE."

Give (me)	...	...	...	...	...	Vang.
The woman gave me many eggs	...	...	...	...	...	Ginum na bare yeshi na kadagu.
The boy gave me four eggs	...	...	...	...	...	Wula na ban yeshi kadi.

VERB "TO SEE."

I see him	...	...	...	...	...	Dua ndali.
I do not see him	...	...	...	...	...	Dua ndal'ua.
I saw the woman yesterday	...	...	...	...	...	Ginum dibela wa ndali.

SUNDRY PHRASES.

Open the door	...	...	...	...	...	Jaga za lei.
Take (it)	...	...	...	...	...	Zia.
Take it away	...	...	...	...	...	Zia dale (? = dile).
Put it in the hut	...	...	...	...	...	Zia zi vun.
I have broken the stick	...	...	...	...	...	Zo wa gala.
Bring	...	...	...	...	...	Do.
Bring water	...	...	...	...	...	Do am.
Wait a little	...	...	...	...	...	Moi sikomar.
I hear	...	...	...	...	...	Wa shinga.
I do not hear	...	...	...	...	...	Wa shinga wa.
I know	...	...	...	...	...	Wu sung.
I do not know	...	...	...	...	...	Wu sung wa.
I drink	...	...	...	...	...	Wa se.
I eat	...	...	...	...	...	Wa zum.
I sleep	...	...	...	...	...	Wu ne.
Sit down	...	...	...	...	...	Zartūng.
Tell him	...	...	...	...	...	Giri.
Good morning	...	...	...	...	...	Ka ga zi.

When Shehu Lamino came to see Miriama at Ngala she was asleep. Her attendants woke her up and said :—

Agza na lo (=lu)	...	...	...	...	...	Your man with the teeth has come.
Mundadi na lo (=lu)	...	...	...	...	...	The red man has come.
Agbwale na lo (=lu)	...	...	...	...	...	The monkey has come.

Shehu Lamino, not understanding, wrote them down for future inquiry.

This was told me at Ngala.

GENITIVE CASE CONSTRUCTION.

Chief of the town Mai sugu.

PRONOUNS.

Singular	1	...	...	...	...	...	...	...	Wa, wu, w, o.
	2	...	...	...	...	...	...	...	Ka, ku.
	3	...	...	...	...	...	...	...	Na, no (future), na (fem.).
Plural	1	...	...	...	...	...	...	...	Mu.
	2	...	...	...	...	...	...	...	—
	3	...	...	...	...	...	...	...	—

NOTE.

There are some differences between Barth's version and mine which I should mention.

Where I have "N" he may have "L," but this is a recognized phonetic change in many African languages.

Again, where I have "Sh" he has "Th." Now Barth was German, and although his knowledge of English was very good, it is open to debate as to how he heard, or rather said, "Th" himself. On the other hand, my informants were very old men, and may have been unable any longer to say "Th."

Barth has for the numerals "6" and "7," Kanuri words in place of the pure Ngala words which I recorded.

As to accent, I sometimes found the last syllable of a word had an emphasis on it, and it was in a rising tone.

I cannot help thinking that in Barth's version as printed in the late P. A. Benton's book, the letter "H" has been frequently printed for "A." This is noticeable in the numerals, which read singularly harshly in his version. The error, if such it be, is probably due to Benton's having written the words in block letters, in which case they could easily have been confused in the manuscript.

THE MEANING AND METHOD OF THE ERECTION OF MONOLITHS BY THE NAGA TRIBES.

[WITH PLATES XIV-XVI.]

By J. H. HUTTON, C.I.E., I.C.S.

IN a former¹ paper I described to some extent an Angami practice of pulling and erecting certain wooden posts, phallic in form, which I suggested were connected with the monolithic remains at Dimapur. I also mentioned a case in which such a wooden post was definitely used as a substitute for a monolith, but beyond this I did not offer any explanation of the erection of stones by Naga tribes. This I propose to do now, and would begin by referring again to the Lhota case of a clan in Yekhum which is barred from the privilege of erecting stones, but may erect a wooden post (the female form is used) instead.²

Now the *kechiesü* ceremony of the Angamis of Kohima village *must* be preceded by the *lisü* ceremony, and the latter is normally regarded as a step in the social scale to be followed in the ordinary course of events and with reasonable good fortune by the *kechiesü*, which places the performer in a social position beyond which the majority do not aspire. The ceremonial of the *kechiesü* and of the *lisü* is of a similar description, and both take place during the performance by the village of the *terhengi genna*, which celebrates the successful harvesting of the rice crop.³ It seems a fair conclusion that the *kechiesü* is no more than the translation, into the permanency of stone, of the effect previously sought by means of wooden symbols. For this translation into stone it is natural that a higher qualification of prosperity should be demanded than for the previous ceremony with wooden posts, and accordingly the standard of expenditure in cattle and rice-beer on the *kechiesü* is fixed at a higher scale.⁴ The stones set up at the *kechiesü*⁵ must be regarded, therefore, as phallic symbols, like the wooden posts of the *lisü*, though the difficulty presented by the material has prohibited the nature of the symbols from being shown by carving, with the result that the Angami himself has forgotten what the stones actually represent. The production of the carved stones at Dimapur was presumably facilitated by the existence of skilled labour which a powerful prince in the plains

¹ *Journ. Roy. Anthropol. Inst.*, lii., June, 1922.

² *Ibid.* See also *The Lhota Nagas*, by J. P. Mills, p. 144.

³ See *The Angami Nagas*, p. 201.

⁴ *Ibid.*, pp. 231-2.

⁵ *Kechiesü*, or, abbreviated, *chisü* < *kechie* = "stone," and *sü*, "drag," similarly *li-sü* = "post dragging."

could command, as well as by the material (sandstone) from which they were carved.

There are other considerations which support the assumption that Naga monoliths are phallic in origin. Instead of a single stone, the Angami (of Kohima, at any rate) erects a pair. One of the reasons he gives for this is that anything else is abhorrent to nature.¹ The monoliths of Dimapur, if they cannot be said to be exactly in pairs, may at least be described as in double pairs, since the main group, and the best preserved, is arranged in four parallel and equidistant lines, two of female stones and then two of male (Pl. XIV). Like the Angamis, the Kacha Nagas (Nzemi) regard it as tabu to erect a monolith without a companion, though in their case the companion takes the form, not, as with the Angamis, of another erect stone, but of a dolmen, the female principle being represented by a recumbent stone, as it also is among the Khasis, who erect the combination of stones called by Mr. Perry² a "dissolith," in which the erect stone represents the male and the prostrate stone the female.³ With the Kacha Nagas, however, the two stones are not placed in contiguity, and the female is not laid flat on the ground but definitely raised in the form of a dolmen (Pl. XV, Fig. 1).

It should be understood that adherence to duality in the erection of stones may not be universal among Naga tribes. The Lhota, for instance, when he first pulls (or carries) a stone, sets up one only. Yet he too sets up two when he proceeds to the subsequent ceremony, which seems to be the acme of his social ladder;⁴ and although he may several times repeat the ceremony, he never again sets up more or less than the two, so that possibly his plan of pulling one before he proceeds to pull two stones, merely emphasizes in a different way the importance of making a pair. I have, however, certainly seen single erect stones in other tribes, though some of them were perhaps informal erections of the vaguest significance only.

Another Naga practice which perhaps indicates an association between erection of stones and the enhancement of fertility, is the Konyak Naga practice of setting up an erect stone in the middle of the stone platform in front of the "morung" on which the heads of enemies are exposed after a successful raid⁵ (Pl. XV, Fig. 2). These stones too are sometimes duplicated, and in the case of some which I have seen the shape was distinctly suggestive of a phallic intention, though their peculiar shape was explained to me as accidental, which is unlikely, as I saw a number of such stones.

¹ The same reason is given for the retention of a pair of *Kemovo* by Eastern Angami villages. (*Ibid.*, p. 188; cf. also p. 142, n. 2.) The Sema chief who goes out to found a new village always takes a companion, "to go with him like man and wife," and this companion becomes a sort of subsidiary chief. The same idea is certainly present throughout.

² *Megalithic Culture of Indonesia*, p. 16.

³ Gurdon, *The Khasis*, p. 151.

⁴ *The Angami Nagas*, p. 365.

⁵ Soo too the Tangkhuls. See Hodson, *The Naga Tribes of Manipur*, p. 117.

To qualify, however, the view that Naga monoliths are phallic symbols intended to promote fertility on the principles of sympathetic magic, we have the undoubted fact that Naga monoliths, like those of the Khasias, are used as memorials of the dead. In particular, in some Angami villages the son (usually the youngest), who inherits his father's house, has to set up to his father's (or it may be his parents') memory a stone (or stones). There seem to me to be two possible explanations, of which the more likely is that the erect stone is merely a translation into stone of the wooden statue¹ set up in memory of the deceased by many Naga villages which do not set up memorial stones. Villages that do set up memorial stones do not appear to use the wooden statue. The translation loses, it is true, in resemblance to the dead, though not very much, but gains a great deal in permanence. The alternative is that the erect stone has first come to be regarded as the memorial to a feast, the original meaning being forgotten, and thence as a suitable memorial to a giver of feasts. Indeed, there is perhaps no reason why these two ideas should not have been combined, and it is possible that a parallel for the second suggested explanation is to be found in the Khasia Hills.²

In describing the method of erecting monoliths followed by the Angamis, I think that I cannot do better than give the details of the erection of a pair of stones witnessed by me in December, 1921, during the *Terhengi* of Kohima village in that year. I was present throughout all the proceedings with which the stones themselves were actually concerned. These all take place outside the actual precincts of the village, and I did not witness any part of the *genna* which took place inside the performer's house, or elsewhere in the village itself. The account given is from notes taken during the proceedings. I also took such photographs as the failing light of a December sunset permitted, for a beginning is always made as late as possible in the afternoon, since no one taking part may eat again that day. Consequently most of the photographs proved failures.

The stones had been quarried out previously from the side of the hill alongside a level path, and had been left lying horizontally on their edges. The bigger of the two measured roughly six feet in length by three broad and two thick, but the shape was not regular, so that any estimate of its content as 36 cubic feet may be either somewhat above or below the actual figure. Taking the weight of a cubic foot of stone as 120 lb., the big stone must have weighed at least a ton and a half. The female stone was from a third to a half of the size of the male stone. By the time that I arrived on the spot on the first day several coils of creepers (for ropes) had

¹ *The Angami Nagas*, pp. 47, 227. This statue seems to be sometimes accompanied by a small vertical stone placed behind it, and in some villages (*e.g.* Khonoma), where no wooden statue is erected, a small rounded vertical stone is built into the stone superstructure of the grave, and this stone, as Angami put it to me, *is* the deceased, but it should be added that separate memorial stones are erected in the rice fields.

² At any rate, the Khasi stones seem not unconnected with sacrifice (Gurdon, *op. cit.*, p. 152).

already been collected. First of all the sleds for dragging the stones on were brought. They were old sleds, for though the sleds are by some left alongside the erected stone to rot, others take them away to use again. This is generally done in Kohima, possibly owing to the shortage of big trees. The sled is made from the fork of a big tree, and V-shaped,¹ the two arms being very roughly trimmed and bored, each with three or four transverse holes to correspond. A hole is also cut in the nose of the V.

The female stone's sled arrived first, carried on a pole by two men (Pl. XV, Fig. 3), the male stone's sled, which was too big to be carried conveniently, being dragged after it. Each sled was laid alongside its stone so that the narrower end of the stone was next to the nose of the sled. Saplings were cut and made into staves to put through the holes in the arms of the sleds to make a bottom to it (Pl. XVI, Fig. 1). The sled was then held in its place with one arm touching the stone by means of men pushing on long poles, while others prised the stone up gently with levers of wood and tipped it over so as to fall on to the sled along its length. Having got the stone on to the sled, its position was adjusted with the help of the wooden levers till it lay fairly along the sled with its weight as evenly distributed as possible. Most of the poles and levers required were cut on the spot, but one was of specially hard wood kept for such purposes and brought down from the village for the occasion. Once in place the stone was ceremonially tied with a frail piece of the creeper called *rūpo* by two boys called *nasami* (new men)² who must be chaste boys of households bound to the performer by ties of friendship. The stone was then lashed very stoutly to the sled with creeper ropes tied both to the staves underneath and through the holes in the arms. Creepers for pulling the sled were then attached, being run through the nose of the V. In all these proceedings the male stone took precedence. Nothing further took place on this day.

On the second day proceedings began a little earlier, as there was more to do. More creepers were attached to the sled, and in the meantime a ceremony called *kechie-zhe* took place, consisting apparently in the offering of a substitute for the stone to the place where it stood, or possibly of a propitiation for its removal. Three stems, with their heads, of the herb known as *sütá*, were set up, two vertically and the third horizontally across them (Pl. XVI, Fig. 2), possibly representing the stone in its final position after erection, in which case it may have been merely sympathetic magic.³ To the horizontal piece two little

¹ By some Angamis the sled is made of two separate runners, see the illustration at p. 233 of *The Angami Nagas*.

² The idea, perhaps, is that they have reached manhood, but still retain their fertility unimpaired.

³ To ensure the completion of the ceremony, and therefore also the successful dragging of the stone.

leaf-cups of rice-beer were attached, each cup having a long flat-leaf trailer. Pieces of plantain-leaf were also placed on the ground in front and at one side, and liquor from a small gourd specially brought was poured out on them. The gourd was itself left on the spot. Next a half-grown chicken was released¹ on the stone, and the cage of split bamboo in which it had been brought was thrown down by the *sütá*. After this a piece of the thin creeper called *roti* was attached to the lashings on the stone and ceremonially pulled by the two *nasami*. This, like the tying on the previous day, was a mere form, as any real pull on the creeper would have snapped it at once. Then the performer himself came with four heads of *keprie*, apparently a species of wild oat (two heads for each stone), and threw one down stalk forwards,² the way the stone was to go, a little ahead of the stone, and a second behind it in the same manner, the second being alongside the sled. At the same time he addressed the stone in these words: "Your place is not here. We have made another for you. You must go to that which we have made for you. Go lightly and go quickly!" The male stone is then pulled out into the fairway, while the same ceremonial for the female stone is completed, after which the female is pulled off by a small party ahead of the male, whom she passes where he awaits his pullers, and whom she must precede to the site of erection. Otherwise, in all the procedure already described, which is repeated in the same form for each stone, the male takes precedence, as he does in erection itself.

The pullers for the female stone were few in number, and wore little more than their everyday dress. They were there for business, however, rather than for show, and got the stone away without much difficulty, proceeding down between the two long lines of waiting men, all tricked out in full gala costume, who already had hold of the ropes of the big stone, and were only awaiting the signal to start. They did not all mean business, as not only were many of the younger men too beautifully adorned with elaborated head-gear to pull very much, but every possible male of the clan had turned out, including the smallest boys, who wore gala dress like their elders. The latter were right in front, followed by the young bucks in their glory, and these again by the grown men in more subdued costume. In all there must have been at least two hundred men to pull, of whom the greatest strain fell on those immediately in front of the stone and on the extra men who accompanied them alongside and behind to relieve them of part of their burden at difficult places. When the signal was given all started to pull, and once off, the stone moved easily enough after his partner, with an occasional rest on the way as she had. The course, so to speak, was about three or four hundred yards along an approximately level path most of the way,

¹ Cf. *The Angami Nagas*, pp. 179, 209, 346, 408, and *The Sema Nagas*, pp. 197, 262.

² The performer stupidly threw it down with the stalk pointing in the wrong direction at first. The master of the ceremonies picked it up, admonished him, and made him do it again properly. As in the case of the *Lisü gema*, the master of the ceremonies is not the *Pisü*, but any old man known to have a thorough knowledge of the correct procedure.

but with two awkward right-angled turns, and just before the shelf on which the stones were finally to stand, a perpendicular ascent of four or five feet, followed by a steep but short slope up to the shelf. All went well as far as the ascent, the corners being negotiated by the pullers close to the stone swinging their weight out off the path to keep the sled on it at the turn. In going up the ascent, however, the principal creeper that ran through the hole in the nose of the sled broke. It was tabu to go back and get a fresh one, so the broken ends had to be tied. To pull the bigger stone up the four or five feet of perpendicular needed a very strenuous effort, or rather series of efforts, on the part of the more serious pullers nearer the stone. Eventually the stone was pulled up and laid beside his mate on the slope above the narrow shelf selected. Here the sleds were wedged to guard against a possible slip, after which they were formally held in position for a considerable length of time, as though to make sure that they had settled down safely. On this occasion they were thus held for twenty minutes or more, while drinks were fetched from the performer's house in the village. Before leaving go, a little packet of cooked rice, wrapped in plantain-leaf, was given to each stone, tucked under the creeper lashings on the stone. Once the stones were left, they might not be touched again that day whatever happened. As on the previous day the persons taking part in the proceedings might eat nothing in their own house that day.

On the third day nothing was done to the stones at all. On the day after, the shelf was levelled and edged with dry stone masonry of the sort used to build, say, a Cotswold wall. At the foot of the sled, on which the big stone was, a hole about a foot deep was dug. The sled, which was pointing north where it lay, was then dragged round till its nose pointed west, its broad end remaining at the edge of the hole, but now facing east instead of south. The lashings on the stone were then cut, a stick being inserted under the creepers to take the stroke of the dao, as it is "*genna*" for the dao-blade to cut the stone. Then, while the base of the stone was kept in place by means of pressure applied by long poles pushed by a number of men to prevent the stone slipping off the sled into the hole too soon, the other end of the stone was raised by inserting levers, raising it a fraction, wedging it, prising it up a little more, then wedging it again, the wedges consisting of sections of trees of gradually increasing lengths inserted between the end of the stone and the ground, the insertion of a longer wedge allowing the shorter one to be used again nearer the base of the stone. In this way the end of the stone was lifted off the ground, when it was harnessed with a creeper noose, put over the end, which was pulled on by others, who at the same time assisted those keeping the base of the stone in place by putting one foot on it while they pulled. Thus, pulling from in front and prising from behind and propping it with longer wedges underneath every time the stone was raised at all, they gradually lifted it to an incline of about 45 degrees. The next effort caused the base of the stone to slide off the sled into the hole at the foot, and at the same time the pull on the creeper noose brought the stone into an

upright position, those behind now pushing with their hands. As the stone touched the vertical, all pushed in close round the stone, forming a sort of "scrum" with their hands on the top of the stone to steady it, while a great cry went up.¹

Held thus the stone was wedged underneath to make it stand firmly on its own base, after which the hole was filled in, when the stone stood erect of itself. The earth round the foot was then rammed and filled in and rammed again. A space was then measured off from the north edge of the stone to locate the position for the erection of the female stone. This space had to be exactly wide enough to admit four smallish stones² previously selected to be laid horizontally between the female stone when erected and the stone already standing. The hole for the female stone was then dug, and it had to be at least so deep that the stone when set up in it should not be higher than the male stone.³ The female stone was then erected in the same way as the other, but when it was standing vertically in its still unfilled hole, it was discovered that a little too much space would be left between it and the male to be exactly filled up by the united breadth of the four horizontal stones selected. It became necessary, therefore, to move the female stone a few inches nearer to her partner. This was done by lashing on to her, back and front, two horizontal poles. As many men as possible applied themselves to these poles so as to take as much as they could of the weight of the stone. To the base, now resting comparatively lightly on the ground, levers were applied, and the stone thus edged in towards the male stone inch by inch in the erect position. When the interval was exactly right the hole was filled in. Then the space between the two stones was paved with the four flat stones already referred to, and a similar rough paving laid all round the feet of both stones. This paving was earthed over so as to fill all the crevices. The two stones thus erected stood in the same line and had their fronts facing east in the same plane (Pl. XVI, Fig. 3).

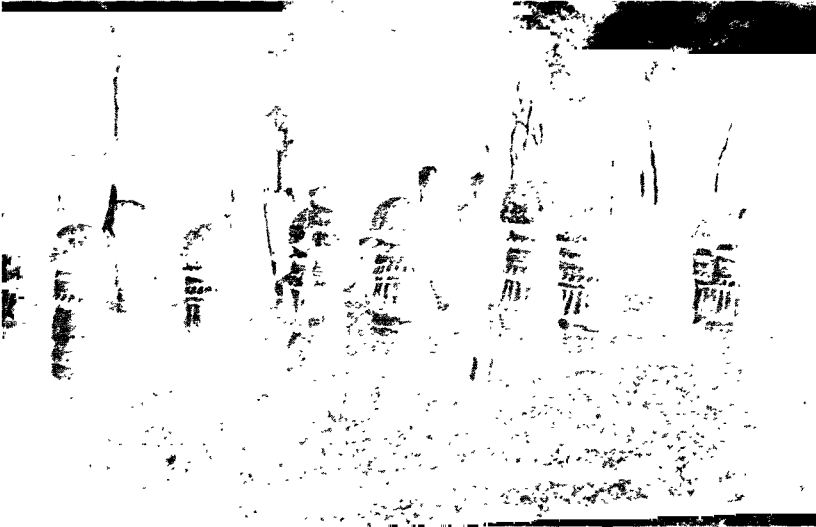
Strings of the creeper *rüpo* were then again tied round the stones, near their base, and a little liquor in folded plantain leaves tucked in between the creeper and the stone, two such leaf-cups being offered to each stone. A little bull's blood was also put on each stone near the top. The whole appeared to be a repetition of *kechie-zhe*.⁴

¹ The cry was a typical Naga yell that may be heard any day in the Naga Hills, and heard by me perhaps several thousand times. I had my attention entirely concentrated on obtaining detailed and accurate notes of everything that took place, together with what photographs I could get. Romance was never further from my mind. Yet, either on account of some unusual, if undetected, quality in the cry, or some unsuspected working of my unconscious mind, I experienced on hearing that shout a most extraordinary, inexplicable and disconcerting thrill. All unexpected as it was, it was as though it had touched in me some obliterated memory of a similar triumph handed down through uncomprehending generations from some neolithic progenitor of the remote past.

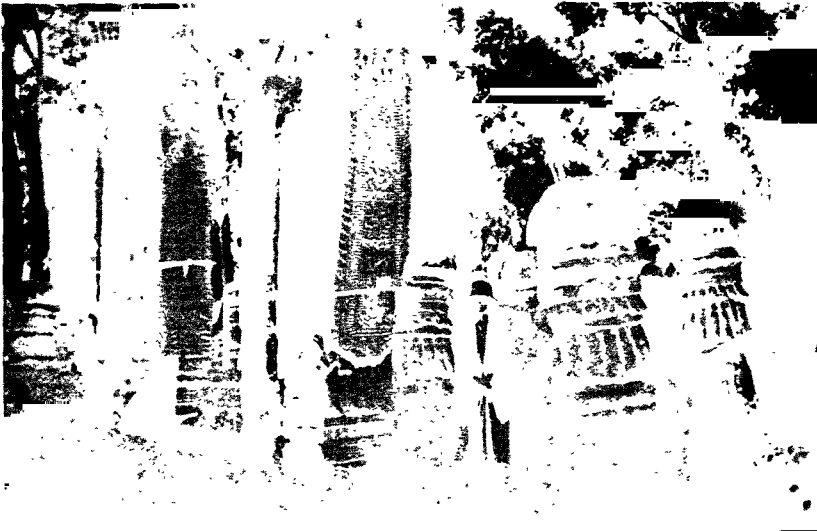
² About 12 to 18 inches long and 8 inches or so broad.

³ In the results, of course, it is always lower.

⁴ On the second day, see above. The gourd, when thrown down by the stone, *must* point away from it (eastwards). I could get no reason.



1. THE STONES AT DIMAPUR SHOWING THE ALIGNMENT (LOOKING OBLIQUELY
ACROSS THE FOUR LINES).



2. THE LINES OF STONES AT DIMAPUR (ANOTHER VIEW).

THE MEANING AND METHOD OF THE ERECTION OF MONOLITHS BY THE
NAGA TRIBES.



1. KACHA NAGA MENHIR, WITH THE ACCOMPANYING DOLMEN IN THE BACKGROUND.

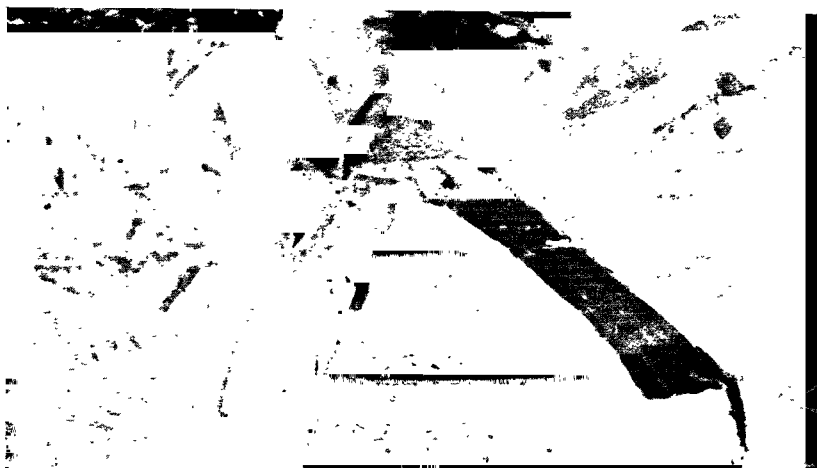


2. STONES ERECTED OUTSIDE A KONYAK MORUNG.



3. BRINGING THE SLEDGE FOR THE "FEMALE" STONE.

THE MEANING AND METHOD OF THE ERECTION OF MONOLITHS BY THE
NAGA TRIBES.



1. THE SLEDGE FOR THE "MALE" STONE, WITH CROSSPIECES READY INSERTED TO RECEIVE THE STONE.

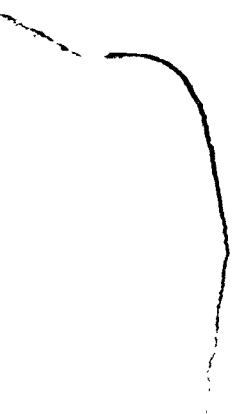


2. THE *sütá*, ETC., SET UP FOR THE *Kechie-zhe*.



3. THE STONES AS FINALLY ERECTED: THE "MALE" STONE TO THE LEFT (AND SOUTH).

THE MEANING AND METHOD OF THE ERECTION OF MONOLITHS BY THE NAGA TRIBES.



Throughout the proceedings on this day the performer himself was present, carrying a spear to which was tied a bunch of feathers pulled from a live chicken. This chicken was destined to be kept until the *Sekrengi genna* following, and killed with a stick on the day “*kizhe*” of the *genna*.¹ As the afternoon wore on, he did not cease from urging those working to greater efforts and greater speed, as once the sun had set that day nothing more could be done.

After the second *kechie-zhe* some of the workers took away the sleds to keep and use again another year,² and the last act was for those who had been finishing off the stone paving and retaining wall to bring a huge block of a flat stone to serve the passer-by as a seat. As this was put in place at one end of what was now a stone platform, the last edge of the sinking sun dropped behind the top of the mountain of Pulebadze.

¹ See *The Angami Nagas*, pp. 197, 203, also pp. 230, 232. In Kohima village the *chisi* (stone-pulling) *genna* is performed at the *Terhengi* not, as in some villages, at the *Sekrengi genna*.

² Others leave them lying by the stone, some even use them as fuel, but in such a case they may not be burned in a dwelling-house, so are used in the “morung” (*op. cit.*, p. 49).

BIRTH CUSTOMS OF THE EDO-SPEAKING PEOPLES.

By N. W. THOMAS, M.A.

AMONG the Edo, the rites connected with birth appear to take a more prominent place in the life of the people than they do among the Ibo, their neighbours to the east. The reason for this appears to be that in the latter tribe a good deal of the available energy, and perhaps capital, is devoted to ceremonies, such as those connected with the "titles," which are non-existent among the Edo.

I gave some account of the Edo tribes in a paper on burial customs;¹ I therefore pass over the subject here, merely remarking that my data from the Sobo country are relatively meagre, owing to my brief sojourn in their territory, which made it difficult to get the women to talk freely.

Among the Edo proper the pre-natal ritual differs from place to place. At Gwatō, when a woman conceives, she makes "medicine" for her waist and drinks it; if it is the first child, the husband buys a goat, called *ewikpisi*, and sacrifices it to his wife's father. From the fifth month of pregnancy the woman wears her hair in a manner known as *isaba*; it must be dressed by a woman who has borne one son, and kola is offered to the comb and pin used in the operation. In the eighth month the same woman must dress her hair in another style (*uleha*), and this she keeps unaltered until seven days after birth.

At Iyawa, on the other hand, a woman takes a cowry, when she finds that she is pregnant, washes it with "medicine" (*oxumu*) and ties it round her waist. In the fifth month she takes a cord (*igivieko*) and ties it round her neck; she also smears white clay on her body—a general custom according to my observation.

At Okolo, near Usen, on the Yoruba border, in the case of a first conception a diviner is called to ascertain to whom sacrifices are to be made; mashed yam is offered, before birth, to the unborn child; it is put on a plate upon the knee of the mother and all present say, "eat yam."

Ritual prohibitions again are observed only in some places; at Gwatō birth takes place sometimes inside the house, sometimes outside; in the former case no male is allowed to be present. But at Eviakoi both men and women may be present, while at Iyawa assistance may be rendered by members of either sex, though the umbilical cord must be cut by a woman. The knife is usually a splinter of palm midrib (often called "bambu"), but at Okolo the prescribed instrument is a piece of bottle glass. Parturition takes place in various positions, kneeling, squatting with a woman to support the mother behind, or sitting; I saw in one place a stool or chair for the purpose.

¹ *Journal*, I, 377.

After the cord is cut, leaving a portion at Eviakoi as long as the midwife's left forefinger, they split the adherent portion up to the umbilicus at Gwatō and take out a "black thing"; the end of the cord is sometimes anointed with palm oil. At Eviakoi one of the women chews a pod of "alligator" pepper and spits it upon the end of the cord.

At an early stage of the proceedings the child is washed, first with sand and then with water, either in the house or at the back; at some places my informants mentioned only water, but this was, I think, an oversight. The mother sometimes washes elsewhere.

The placenta may be buried where the child was washed (Gwatō), where the birth took place (Ugo), in the open space (i.e. *impluvium*), in the centre of the room, inside the house beneath the threshold of the room (Iyawa), with a lump of sand (*elu*) over it, or a "stone"; at Gwatō they throw on this spot for the next three months the water used to wash the child; at Usen the mother mashed yam on the spot; it is put there by the woman who buried the placenta.

When the child is brought into the house a calabash is beaten at Ugo, Eviakoi and elsewhere; at Iyawa it is put down by the door and broken by a woman, and the bearer of the child walks on the fragments; at Okolo they sing at the same time ¹*yey asō xi avē*—don't confuse night and day, or *yey avē xe asō*, with the same meaning, implying that the child is not to die untimely. At Ugo, Eviakoi and possibly elsewhere, water is thrown on the roof as the child is carried in and it must drip upon the child. There are other rites of a similar nature, and as they are observed on the day of birth it will be convenient to describe them here. At Eviakoi the mother cuts off a lump of mashed yam, eats it, and says to the child: "Eat and grow big; eat and live; eat and grow strong"; this is done for seven days. At Iyawa, after mother and child have washed, the mother takes the baby on her lap and the woman who washed it counts "one, two, three, four, five, six, seven," meaning that the child is to stay with its mother and not die. The same woman dips her finger first in palm oil, then in grease, and touches the child; this is to avert sickness. After bringing in the child they summon the head man of the town; the father breaks a coconut and also provides a calabash of palm wine and four kola. A man or a woman now shaves the child's head and someone is sent to the bush for "medicine," which they mash upon a stone with the hair. The four kola are then sacrificed to Otō (the earth) and both kola and coconut eaten. The next step is to rub the medicine on the child's face; women also apply it to their bodies; then all the men go home.

Late in the afternoon the women return, and the father provides for them a coconut, four kola and a calabash of palm wine. There is a general custom for the father to provide one, or sometimes (Usen) seven, yams for a girl, nine for a boy,

¹ *y* is used to indicate the velar fricative sonant.

usually eaten on the seventh day after birth; at Iyawa the mother cooks this "pillow" (*ukohumu*) for the women on the day of birth, mashes it with oil, and adds meat; a sacrifice is offered to *Oto*, and the women share the rest; one woman is sent to put a piece on the spot where the child was washed.

The women then sing seven songs. The following were noted at Eviakoi:—

Gw era dia; iximi yi ri ogbe—stay with (your) father; the *iximi* tree does not come out of the ground.

Usu me o xi usu n obu; oyeme fog oha—my line is a long line; there are many monkeys in the bush.

Ef odo o m om̃o yu ob̃o; mu e m ese gegege—husband's father gave you a child in arms; hold it tight.

At Iyawa, however, only the first of these songs was sung; the remainder were different.

At Igwiximi the mother receives the child when it is brought into the house, takes mashed yam in her mouth, and blows on the child, saying: "Eat, grow; eat, be strong."

When the cord drops off, it is handed, as a rule, to the father, who ties it to a kola or coconut tree; this tree is the property of the child when it grows up. Usen, however, observes the rite without the latter portion of the custom.

The ordinary practice is for mother and child to remain in the house seven days; but at Iyawa they wait for another seven days. At Eviakoi the woman who buried the placenta comes; she eats some mashed yam and puts some on the heap above the placenta, together with a small yam mashed with oil. Then the mother comes and sits down; the woman says: "Go away"; she, however, takes her child. At Iyawa the mother says to the heap: *ga ri, i ri owi me*—go, I take my child, and puts one cowry on the top of the heap.

The ceremonies on the seventh day after birth show some variety; in Edo itself the men and women of the compound are called to eat coconut and kola; one half of the "pillow" yam goes to the men, the other to the women; all suggest names for the child and the father chooses the one he prefers. In some families the child's head is shaved on this day. All children are said to be born with soft straight hair, and when it is shaved off, the mother preserves it in a basket called *atetugwe*; the child does not learn who shaved its head before it is eleven or twelve years old; but there are no rules regulating the choice of barber. It could not, I think, be the father, who in some families may not enter his wife's room after the birth, a rule incumbent also upon anyone who tabus blood (*ade*).

At Gwatō, though mother and child stay at home seven days, anyone may see them. Then the father prepares coconut and kola; women rub the whole house, and a diviner names the *eb̃o* to which sacrifice must be offered. Then the father makes "medicine" for the child, and after sunset the women of the compound come to receive the coconut and kola. The "pillow" yam—here called *inya k om ohu*,

“the baby’s yam—is cut; the women eat part and the father plants the rest. Mashed yam (which is commonly called *fufu*) is thrown on the ground in the front and back of the house, and kola is also put down and afterwards eaten; the father names the child that night; but anyone present can give another name, so that more than one name is actually in use in some cases. At Utekō a woman born in one quarter and married into another was known by different names in the two quarters, neither knowing of the alternative name.

The next rite at Gwatō is to make *ijobo*, a purificatory ceremony consisting in the carrying away of a sacrifice behind which walks a man knocking together two knives. One family of this town, when the child’s hair is cut—scissors, not a razor, being the prescribed implement—sacrifices a goat and rubs the blood on the child’s head.

At Ugo the child’s hair may be cut on the day of birth or in three months, and here the hair is mixed with the “medicine” used to rub the child. The “pillow” yam is cooked on the fifth day, and is eaten by the mother and one woman of the quarter, who also name the child; after this it may be taken outside the house, but not into the street. On this day also the house is rubbed and swept.

Eviakoi practises the customs on the seventh day. The elders come about midday; they sit in the “father’s room” and offer kola to Otō; people are sent into the bush to get leaves for “medicine.” The women of the quarter come and eat *fufu* and also the “pillow” yam mashed with oil; the head woman sacrifices kola to the earth; when the “pillow” yam is shared out, the woman who buried the placenta gets a large share. Then names are given to the child.

When the child’s head is shaved, an elder takes some of the hair and adds it to the “medicine.” The child may now leave the house and be taken to the farm, but not the market. The house is rubbed on this day. At Igwiximi the men sacrifice and eat kola in the morning, the women receive coconut and four kola both morning and evening, with one leg of duiker (*uzo*) and the “pillow” yam; when they eat, all say: *o gwe dia*—he stays with you. At Okolo the mother goes to the river on the seventh day after birth and washes both herself and her clothes. Then she rubs the house and the diviner comes; all sit down and follow his orders. Small pieces of yam and chicken are put in a calabash with the bones of animals and broken palm nuts; some one touches the child with it, saying: “Don’t die.” At night all the women come and eat; they sing seven songs, but in Yoruba, not Edo, according to two older women; the old men confirmed the statement. I obtained, however, the texts of some Edo birth-songs, one being identical with a song used at Eviakoi. Others were:—

S eri edi, olo xoro—put oil with palm nuts, it is spoilt.

Ga ge m omō w obo, ye ga ge m ukpō w eku—look at the child in my arms, don’t look at the cloth on my waist.

Father, mother, and the women give names to the child, and the women say “your child will not die.” The hair from the child’s head is mixed with

medicine and rubbed on the child's face. The father pulls a small *iximi* tree up by the roots, mashes it, and makes small cuts all over the child and rubs the medicine into them.

In Edo the mother stays at home two, or more often three, months; then she goes to the back of the house, looses her hair and washes it with soap; after this she can go to market, carrying the child on her back; her friends give her cowries when she goes for the first time.

At Gwatō if the child is to have its head shaved, it will be done after three months at the latest; the mother looses her hair in the morning and does not carry the child till her hair is dry. My Gwatō informant asserted that Edo women washed only their faces.

The house is now rubbed for the second time, and the mother buys a small chicken which is swung in the hand in various parts of the house; *afō* (*Dissotis rotundifolia triana*) is cut up in a calabash with chalk and scattered about the house; people now say: *o fu re*—" (the house) is cold." The chicken is hung up in the gate, and visitors to the house pass it round their heads as a purificatory rite and put it back. Some men in this town are forbidden to visit a woman who has borne a child until three months have elapsed.

At Iyawa the mother washes at the end of three months; she also buys two chickens—one for her husband, one for the midwife—which they pass round their heads as a rite of purification. The chickens are afterwards thrown into the bush. The rite in which the mother eats *fufu* and breathes on the child is practised night and morning until the three months are up. Among miscellaneous observances may be noted the abhorrence of twins, which, however, seems to be of recent origin, and the rule that a child must not be brought into the house if it does not cry. In Edo itself the *fæces* of the child are for some time after birth thrown on the fire. At Ugo, when a milk tooth falls out they throw it on the roof; there is no special custom for the first tooth. At Eviakoi the first person to see a tooth in the child's mouth gives it cowries, or, if it is the father who sees it, a goat or fowl. When a tooth falls out the child throws it on the roof, and lies down quickly so that the new tooth may also come quickly. At Okolo when the tooth is thrown on the roof the mother says: "you will get good teeth now."

It frequently happens in the Edo area that a child is born away from home, either on the way to market or elsewhere; in this case an *iximi* tree is planted in a small clearing by the side of the road to which kola and cowries are offered; when the woman passes the place she will sweep the ground clear of rubbish, but no duties seem to be incumbent on the child. Parturition over, the woman puts the child in her cloth and goes her way unconcernedly. In the Kukuruku country, at Okpe, a child was born one afternoon in the market-place about 3.0 p.m.; the mother made her way home some distance, and in recognition of my interest in her case she arrived with her friends the next morning about 7.0 a.m. to give me an opportunity

of hearing their birth songs and witnessing their dances : these went on for some two hours, the mother being one of the dancers.

I recorded details of birth customs in only two places in the Sobo country.

At Ewu the mother calls a woman to make medicine for her in a soup pot which is given back when the child is born. The mother washes in the back of the house where the placenta is buried ; the child is washed in the court ; the child's end of the cord is tied in a leaf and kept near the fire. The father sends seven yams and palm oil on the day of birth ; some of the oil is used to cook some of the yams for the woman to eat, and the rest of the oil the mother takes to light a lamp for the child every night. In Ewu a woman receives a doll when she is betrothed, and after the first child is born the doll is put beside it ; after the first child, it is hung up and not used again.

At Idumebo the mother washes where the placenta is buried at the back of the house ; the child is washed in the court. The husband brings seven yams in a basket and a pot of oil and puts them in the room ; one yam is put on the bed and the rest are cooked ; the yam which is put on the bed is cooked with another on the seventh day and eaten by the men and women of the compound and the father and mother. The child's end of the string is put with medicine and ground on the seventh day ; part is used for its head, part for its neck, the rest put in a calabash which is used to wash the child.

I obtained a little information on the borders of the Eša Tribe at Irua.

A man's wife puts medicine on her waist three months after she conceives ; at the seventh month, leaves are dipped in water and rubbed on her body and she goes on doing this till the child is born. They employ divination to discover what sacrifice shall be made, and the woman's father and mother do this if they are alive, failing them the husband.

The women of the compound come to help and sometimes make *izobo*, i.e. they take a fowl and, after touching the woman's head and abdomen, throw it in the road. The child is washed in the court in front of the house ; the mother washes at the back where the placenta has been buried ; she goes on washing there for three months. When the child is brought in, two women beat a calabash and sing : " Don't make night into day, nor day into night." The father sends seven yams in a basket, and a big pot of palm oil ; all the women of the *azagba* (compound) come ; they take one yam and put it at the head of the bed and share the other six, one of which goes to the head woman ; each woman brings a pot and gets palm oil. On the seventh day a " big *fufu* " is cooked and the men and women of the compound eat ; the mother gets chalk and marks her legs and forehead. In three months there is another " big *fufu* " ; the mother looses her hair and washes it.

The child's hair is shaved the day it is born, and thrown away ; the child's end of the cord is tied in a dry leaf and hung in the roof or on a coconut tree.

In the Kukuruku country the customs are variable, and an account of them which preserves the sequence is more intelligible than a survey of each item of custom or of each period. I therefore give the main variants, each in a connected narrative of the local customs.

At Okpe they make medicine for the first conception. A woman comes to help, and, after the child is born, they give two calabashes to small children, who knock them seven times. They bury the placenta outside, and the woman washes there for seven days. As soon as the cord falls they mark the child with black stuff and take it into the open air. When it is five months old the mother cuts its hair; a name is given by the father, or by anyone else who is present at the birth, on the day of birth.

A child's milk teeth are thrown on the roof; it is unlucky for children to be born with teeth; all spat when I mentioned the subject and denied that children born in Okpe had teeth till some time after they had come into the world.

At Otua the child may be born anywhere. If it is born in the house many women attend; parturition takes place in a squatting position; the placenta is put in a piece of pot, buried and covered by a stone; the child is washed in the open air; it stays seven days in the house; then it is brought out and marked with black stuff; after that it may be taken straight into the street.

At Wgreki the husband summons a woman to help his wife, and the child is washed in the court while the mother washes in the back of the house; they rub the child with chalk and take it into the house with its mother; the placenta is buried on the threshold. The child's end of the cord is ground and wrapped in cloth with *unie*, a long fruit resembling marrow, warmed near the fire and pressed on the abdomen and the navel to prevent them from hurting. In the case of the first child the whole is kept in the calabash with the child's medicine. In the case of later children the cord may be buried on the threshold. Every four days till the end of the third month they take the child out and rub the house. At the end of three months they dress the child with beads and take it to the head chief, who gives it a name. The child may be shaved on the seventh day and the hair is kept in the medicine calabash; the mother can leave the house after seven days, but cannot work on the farm for one year.

At Yaju the child is born either in the house or elsewhere; if it is born on the farm they bring it to the house before they wash it. The placenta is buried in the court; the child is washed on a woman's knees over this spot; when it is brought into the house a woman follows beating a calabash. One small stone is put at the head of the bed; every day when the mother takes food she puts a small piece of "*fufu*" inside the calabash which she keeps on the raised mud seat; when they are going to take more "*fufu*," she takes some from the calabash, waves it round the child's head, and throws it away; after five days the child is brought into the court, and the house swept and rubbed; this goes on for three months. Then the child is shaved and dressed, and the mother washes and carries it to the head of the family

after giving it a name. The hair is tied by the mother in a cloth and kept in a calabash with the child's medicine. The child's end of the cord is tied in a leaf and the father takes it to a plantain tree, makes a hole and puts the leaf in it; this tree belongs to the child. The mother goes on suckling the child till another one is born, or it may be given to another woman if the mother is away. In five months it begins to take ordinary food.

Anyone who sees the first tooth gets an egg from the mother, fries it, touches the child's mouth and then eats it.¹

In Agbède a woman cuts the cord, takes a warm leaf and presses it on the end; the placenta is buried under the eaves; the mother washes there but not the child. The woman who picks the child up after it is born washes it until the child is three months old. The mother suckles the child and when it is three months old she chews palm nut and gives it to it. They put palm nut at the head of the bed. On the seventh day the child receives a special kind of food in a shell.

Seven days after birth the child is taken out and they sweep and rub the house. Fire is put in the same room as before but the place is changed. The child's head is shaved at three months, and the hair is kept in a bundle in a small basket at the top of the house; the child's end of the cord is tied up and hung where the child sleeps; another woman must see the new tooth first, not the mother; she gets an egg from the mother, touches the child's mouth with some and eats the rest. The child gets an *ukpagu* bead on its neck. According to another account the child's end of the navel string is put in an empty pot on the fire, and the ashes are tied in a leaf and hung over the fire.

At Jagbe the placenta is buried in the court and the mother washes there once; the child is washed elsewhere and the water thrown away. The child's head is shaved in seven days; after this the mother can go to farm or to the water-side; the child stays in the house till people quarrel outside or shout; then the mother can take the child out any day she pleases.

At Idegun the placenta is buried on the threshold, on the right for a girl, on the left for a boy; when the child is brought in, a calabash is beaten; the mother stays seven days in the house with the child. On the seventh day, yams, which are put in the child's bed, are cut up for the women in the compound; then the child is carried into the court and brought back again. In three months the mother buys a chicken and gives it to her husband to wave round his head; all the villagers do the same and the mother can go to farm and to market. The child's head is shaved on the seventh day, or when it begins to walk.

At Ama the placenta is buried in the doorway, and when the child is brought back all women take calabashes and beat them. Till the seventh day no one may enter the room unless women have beaten calabashes; on the seventh day they

¹ Eggs are not eaten, so far as I know, at any other time.

bring the child out on the verandah and touch the ground with its head, saying, "This is the ground which you come to"; the person, who should do this is the woman who washed the child at birth and subsequently. Nine days later the same procedure is followed. Seven yams are put in the child's bed, and on the fourteenth day these are shared among the women in the compound; the child's head is shaved on this day, and it may be taken out. The hair is given to the mother, who simply keeps it; the nails are put in a cloth and kept with the medicine. As soon as the child gets teeth it eats an egg of which the mother also takes a part; lost teeth are tied in a leaf and thrown upon the roof of the house.

At Uzia the medicine which the mother used before birth is rubbed on both mother and child. When the child is brought back to the mother's room they count up to eleven and put the child on its mother's knee. The father puts seven yams at the head of the bed, which are divided fourteen days later; on that day the child is brought, and made to sit upon the ground; they say: "This is your father's house, you must not die"; then it is washed and taken back, and the mother mixes chalk and cam wood to rub on the child. After this the child and mother may go out, except to farm.

At Ekbe the child is carried into the house first and then the mother goes. The child's end of the string is dried in the smoke and then hung on a palm tree, which belongs to the child.

At Eda customs are much the same, but the man who first sees the child's tooth must catch a rat, and give it to the child; the mother eats the rat for the child.

One of the points of interest in the foregoing is the importance attached to the placenta, which is also manifest in the Ibo country. No definite statement was ever forthcoming as to the precise nature of the beliefs about it, but it seems to be in some way a counterpart of the child, though there is nothing to connect it with the *ehi*, or double. The burial of the placenta in the prescribed position is almost certainly held to be a necessary rite if the mother is to bear any more children, but I cannot recall that this was asserted in so many words.

THE CULT OF THE DEAD IN EDDYSTONE OF THE SOLOMONS.

By A. M. HOCART.

PART II.

[WITH PLATES XVII—XIX.]

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V.—SPIRITS.

TOMATE means “a dead one,” “a ghost”; but it is also applied to certain spirits who, the natives think, do not belong to deceased human beings. It is also applied to animals connected with spirits or shrines.

Njiruviri says: “Sometimes men see a spirit (*tomate*); they take it for a man; when they look again it is gone; a spirit cannot stay like a man.” Seeing spirits, however, seems to be uncommon, and we never heard of any concrete case of an apparition. Some men can catch glimpses of them; this is the result of charms. Laiti was treated by Kavepeso as follows: he ate the fruit of *nomboro*, and the

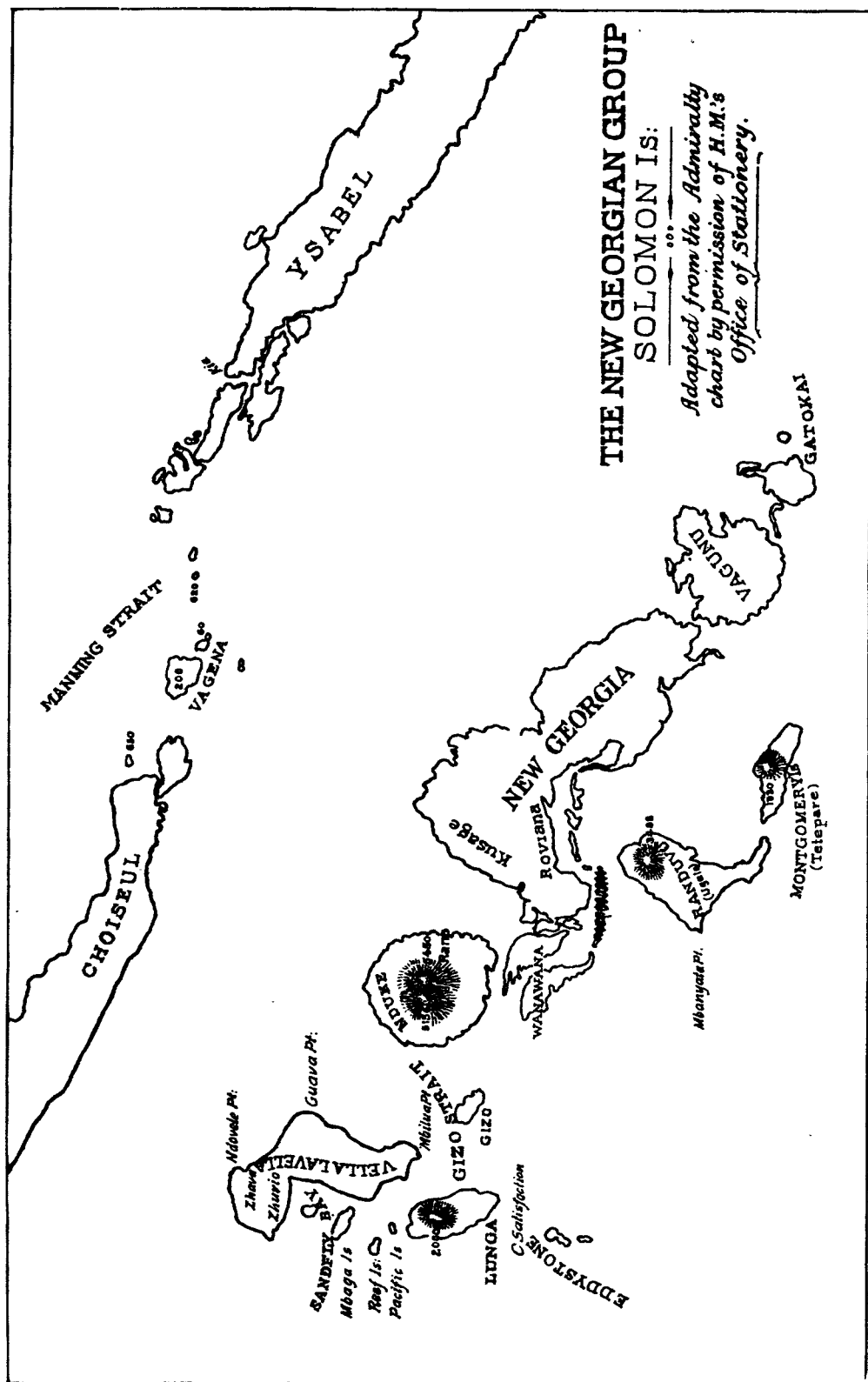


FIG. 1.

eye of a fish called *lomototo* ; he put a grass called *mburumburu* in his eye ; this was repeated four days. Rakoto was treated by his father Laiti, who gave him the scrapings of some plant he would not name to eat with his betel mixture. Rakoto was treated once for all. Nanya, we understood, performs his charm every time he wants to see a spirit ; he eats one fruit of *vonjamboe* ; in the evening he goes into the bush and sees a spirit.

To these three men we are indebted for details about the appearance of ghosts and spirits.

One of us once found an axe in our tent. As no owner could be found our interpreter from the Shortlands thought it might belong to a spirit and advised us to throw it away ; possibly the spirit wanted to kill some one ; on examining it, however, he concluded it was not a spirit's, as there was no rust upon it. Ngea, recently deceased, had got one in the bush, he said. Next day, however, he declared he was not serious about the matter.

At Pa Na Pou, near the beach of Pa Njale, stands a rock with red marks upon it, one like an arrow-head pointing downwards, another like an inverted bowl, a third like the head of a centipede. These were ascribed to the ghosts of men (*tomate tinoni*) ; nothing further was known about them.

Here follows such information about ghosts and other spirits as is not contained in the charms, ceremonies and tales which shall be recounted elsewhere.

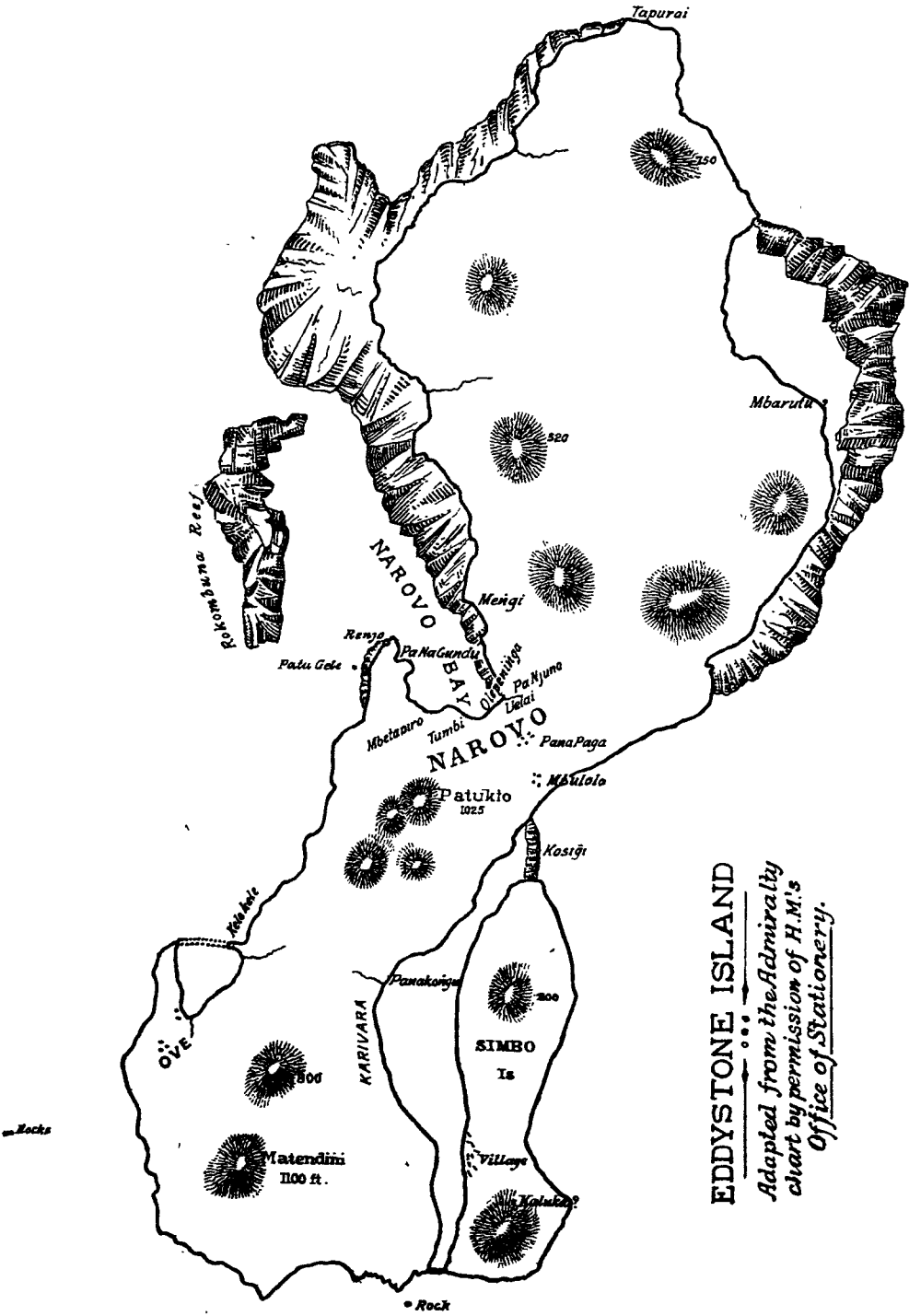
Evil Spirits.

Men who fall from trees and women who die in childbirth are "evil spirits" (*tomate kikerina*). Their names may not be mentioned and if we came to one in the pedigrees he or she was described as "an evil spirit." The manner in which their bodies are disposed of will be described elsewhere ; they are thrown into the sea, and no ceremonies are held in their honour ; no upright stones are put up to them.

The ghosts of the fallen (*tomate uka*) cause the living to fall from trees when they are gathering nuts. The ghosts of women who died in childbirth (*tomate pa na savo*) cause other women to die in the same way.

Ange Mate.

Ange Mate is a female spirit. It was definitely stated that she is the spirit of a woman who died in childbirth. Njiruviri indeed says she is not a human spirit (*tomate tinoni*) ; but evidence from other islands is against him ; so is her name, for *mate* means dead. She has her seat in Renjo, which is a place where women retire for childbirth. Whoever goes there for the first time puts on his neck the same leaves as are used in curing the disease she causes. Paila took us there : "he savvy, he belong him," so he put no leaves on himself, but he gave us some tips



EDDYSTONE ISLAND
Adapted from the Admiralty
chart by permission of H.M.'s
Office of Stationery.

FIG. 2.

of *Barringtonia* (*mbatu putu*) to put on, and asked her that we should not be sick for he had shown us the place that we might "put it in our book." There, by a little creek among the mangroves, we found an image carved by Paila out of a tree fern. He sometimes comes there to offer up a fish called *ganusu*; he used to cook it, but now he hangs it up raw, saying, "Here is the fish for you, the Ange Mate; be propitious; let us eat the fish, we men, so be propitious, let me fish with the net and do not drive away the fish." (XXII.) The net in question is a small net, large enough for both hands, and called *tope*; it is placed among stones; it comes from Kumbokota.

In Pa Na Pouna, some twenty yards from the beach between Pa Njale and Pa Na Gundu, is a hole called "Ange Mate's spring" (Pie Ange Mate); it is now choked up with coco-nut husks. Here we put on leaves of *mbirimiri*.

Ange Mate helps to catch fish. She also causes vomitings to those who walk on the beach of Pa Njale, and if anyone lies there she "catches him," meaning probably that she has connection with him.

Murdered Ghosts.

A man who has been killed by another man of Eddystone is said to be *mboso gugusu*, or "murdered in the land." His ghost is *mboso lau*. To become a *mboso lau* he must be murdered outright; recently two old men wrestled and one died as a consequence of a fall. War nearly broke out between Narovo and Simbo on that account, yet the deceased was not *mboso lau*, as he lingered some time in his house.

The head of a murdered man is not kept and no stone (*ingele*) is set up; but the people were quite ready to mention their names. The ghost has blood upon his hair and bears a wound upon the skull. When a man is ill he sits beside him to make him die, the result being big sores over the body.

Suicides.

The ghost of a woman who has hung herself is called *tomate lovorua*. Her tongue protrudes and her eyes bulge. She does no harm; she is content to catch people by the neck at night in fun without ill results. Her head is kept.

Deceased Parents.

The *ndinandai* is the ghost of the father or mother that haunts the child and causes constant and general ailing. Njiruviri cures it in this manner: he holds in his right hand four leaves of *paripari* and four of *valiolaŋge lĩngiti*; he passes them between his legs into his left hand and then over his head four times, saying: "Come down and depart, thou ghost, thou, his father; do not haunt this child and let him live." (XXIII.) He then puts the leaves into the roof. This is repeated four days at any time of the month.

The Corpse-eating Spirit.

Tomate gani yambo means "the Corpse-eating Spirit." He is spoken of as a bush spirit; he wanders about the bush. Kundakolo drew a picture of him: the corpse, of which the bones are represented by hatched lines, is slung on a pole. The spirit, long-mouthed and long-nosed, is approaching with a club on his shoulder: says he, "Me think this man he no die yet." So he clubs him, with his weapon he breaks up the wrappings. Rakoto, however, says that this spirit is in every respect like a man, even to the mouth.

The Corpse-eating Spirit can cause illness; the body becomes "sore all over," fever develops, and the death is rapid. It is to guard against this that *pepeu* leaves are worn at a funeral (Pt. I, p. 82).

Tuturu.

Tuturu means mad, foolish, ignorant. The spirits known as *tomate tuturu*, or simply *tuturu*, are distinctly mad spirits or spirits of madness. They are very numerous; they haunt the bush and are sometimes called "bush spirits" (*tomate* belong bush). A man who is "caught" by *tuturu* flies to the bush and feeds on wild fruits, wild betel, wild areca, *kaku*, *piku*, *pelo*, and on the root of *oga*: "he no savvy eat *kaikai* belong man"; he cannot drink. When he dies his body is thrown into the sea; however, the body of a Lungan was once left where he had committed suicide.

Narovo is studded with the haunts of *tuturu*. Here is a list given us by Pandangeto of the places where the *tuturu* have built themselves halls (*paile*): Tetege (Pandangeto has a shrine there), Volavola, Varo, Rupeleva, Humbolo, Lokomo, Pa Ngare, Varisage, Mbirimbiri, Ukutuvovo, Narikake, Somboa, Pinapina, Mundoko, Ginjo, Tungu, Ruruai, Silikiti, Kolokolotumbu, Patumboroa, Tite Indaka, Voruku, Tamana Karunje, Kamburai, Mimikasura, Nonola, Keleve, Kitigumu, Njaminjamiga, Varisage, Pakarau, Rano, Kinokale, Kango, Molaginja, Njolofo, and more which I was not able to take down. On the way to Momara, the place of the great god, we passed several "halls," or rather sites of "halls," of *tuturu*. On reaching Mimimau we had to put on leaves of *geligeliongili*; before getting to Ogoga we plucked some *paripari* fern and some *piku*; these three kinds are usual against *tuturu*. There is also a *tuturu's* hall (*paile tuturu*) in Momara itself. In Kinokale is a hole where a brook disappears underground: it belongs to *tuturu*. There is an image of *tuturu* in Pinapau: it was roughly carved out of a tree fern by a man we knew. It has neither arms nor legs, but has a large penis; a clam shell on either side of the head represents the ears; there is a small clam on the chest, and a "*rango*" ornament on the forehead. The place is not considered dangerous, and we could go right up to it. There was no explanation as to why it was put there.

There are five upright stones in Njeligomo known as "the Five Frigate-Birds in Na Saŋa" (*Kalima mbelama pa Na Saŋa*). They were once men, not birds;

they fought in Lunga and many other places, but an enemy, it is supposed, made a charm (*tambu*) in revenge and drove them mad; when they died they "no stink," but turned into stone. It is dangerous to touch the stones and women are not allowed near. Once Girigiri of Ndovele was out hunting; his dog went up to the stones; Girigiri went to fetch him back, but the Five Frigate-Birds were angry and he became mad.

Pandangeto's *tuturu* shrine in Tetege, on the weather shore, was set up by himself. It consists of an altar on which stand the usual upright stones (*ngele*); one of these has a small clam attached to it; the other wore a ring on either side suggesting two ears. Another informant told us the former was *tuturu*, the latter a female spirit (*tomate rekoreko*). When Panda set up the shrine he made puddings and caught fish, which he offered up with the words: "This is yours, the *tuturu* that are dead; be propitious in the coco-nut groves, on shore." (XXIV.) The same offering is repeated every New Year and when the first smoked nuts are ready.

A Floridan, named Tomu, set up a *tuturu* shrine on the rock at Patusogara. Since then it is forbidden to women. A *ragana* tree has sprung up on it which is *tuturu's* hair (Pt. I., Pl. VIII, Fig. 3). Tomu lived with Mbani, who bought the shrine for three rings and three arm-rings; it is now held by Puraña, who there holds yearly offerings of nuts as is done at any skull-house; he says: "This is your pudding, you *tuturu* of Florida; be propitious to me, let me not be ill, let me not be sick." (XXV.) The puddings are made of bananas and sweet yams and nuts. Puraña is as the priest (*iama*) and eats the first pudding (*yamu vakenu*), that is a small sweet yam and some nuts; but he does not put any into the common fire as is done at skull-houses. A special priest is not required as "he no too much *tambu*." The Floridan *tuturu* number ninety (nine?) thousand (*kasia yako*) and their father is *Toga ni mani*. They carry men and pigs off to the bush; they protect Puraña's property; they struck with madness Riko of Tumbi for stealing Puraña's nuts. If Puraña neglects the offerings they are angry with him.

There is a kind of ridiculous-looking insect which is known as *tuturu*: it is not sacred, nor used in charms, nor feared.

We know of no animal connected with *tuturu*.

Tambu Koma.

Tambu Koma was said to be a spirit "belong man he die before." It is he that is generally referred to when the bush spirit (*tomate muṅgumuṅgu*) is referred to. There are several. Rakoto describes them as some 7 feet high with tusks like a boar and hair down to the chest, carrying a spear with which he spears men in the leg; the leg is broken by the blow; this disease is called *takombokolo* (? *takombukolo*). Nanya says they strike men in the loins with the bare fist; the pain is called *piro*.

This spirit is feared at night, in the early morning and late evening; people going into the bush at such times hang leaves (*vovonja*) on their necks. One night Pana went out to seek his pig in the bush and returned in the daytime; the same night he lay down with a pain in the body and called for Nareti, who spat turmeric (?) (*año*) on both his ears and made him eat a bit of it; he passed his hands down his body and blew upon them, and hung leaves of *pasapasa* on his neck. Pana paid one arm-ring. Nareti states that before treating his patient he consults the spirit with an arm-ring (in the way they do when they catch the soul, Pt. I, p. 83); the spirit tells him what "*tambu*" to use. This treatment originally came from Pokokasa in Roviana. I made inquiries in Roviana, but the name of Tambu Koma was unknown; I was always led back to the "bush spirit," which in Roviana is the same as the mad spirit. It will be noticed, when we come to medicine, that there is a certain resemblance between the treatment for Tambu Koma and that for madness.

We were told of a bush spirit that goes about spearing trees which it mistakes for men.

Leprous Spirits.

Leprosy is called *pongupoŋgu* or *popoŋgu*; possibly one is the noun, the other the adjective. We do not guarantee that we have always used the right one of the two in our notes.

A drawing of Kundakolo's represents the leprous spirits or spirits of leprosy (*tomate poŋgupoŋgu*) as covered with sores (*ŋgiŋguana*); they are toeless (*ŋgopu*), and lean on a staff.

These spirits live in the bush or in the stones of shrines. Kunda has figured four of these shrines with the upright stones on which the spirits come and sit. Kunda says there are no arm-rings on the shrines, but only rough upright stones. These shrines are confined to Ove and Karivara; they occur at Titiro, Loga, Olomo, Nyatukindo, Tambuna, Ndoroko, Njarara, Pa N'Ivu, in Karivara; at Tirolivotu, Nārīlulumbi, Mamanini, Tiroginjo, Kamburi, Nyanyatu, Ungunyara, Ngema in Ove. We know that they keep in Tirolivotu the remains of those who knew the *Kenjo* or protective charm which infects the thief with leprosy. At Titiro a succession of priests (*iama*) became lepers, so they gave up the place. In Nārīlulumbi the tabooed spot is a heap of stones at the foot of an *auŋu* tree, which constituted the centre (*popokevu*) of the dancing-ground. In Mamanini is a small shed which can be entered; there used to hang a basket containing three *riko*, that is shell-rings made by gods (*tamasa*), but the basket has fallen, and the *riko* lie on the ground. One of them is perhaps the best we have seen, the yellow stain going about half-way round. In Nārīlulumbi the *riko* hang in an ordinary house which used to be occupied by Toka. It may be entered. Two rings wrapped in the bark-cloth of the kind called *elava* are hung up in a basket; there are some whale's teeth also. One rough

ring of the kind called *mbariki*, blackened with soot and cracked in the rim, hangs from the roof ; it was formerly used as the pedestal of an image (*mbeku*). The basket was made by Amu, who in native parlance "knows how to make it," or as we should say "is qualified," for it is not a matter of technique, but she has been treated by Londu who for a fee stroked her body with *rosi* and put on her crossed belts of *mamaroko*. Amu also makes twine out of *pusi* with which Rosi binds the *riko* ; for the rings are taboo to women. In the chapter on skull-houses I have described how these rings are taken up to Tirolivotu.

The other leprosy sites were merely places in the bush where there is nothing to see and no one goes to see ; no one dares unless he knows the charms, and no one could tell who knew, as it is kept secret. In the days of old, those who "knew leprosy," as they express it, could cause the disease by a mere blow ; at the present day Kapu, who comes from Kumbokota, is the only one who has the power.

The men of Kumbokota are said to know the cure for leprosy. There is a red stream there which belongs to leprosy ; if a man walks in it, the *poponigu* or leprous spirits are angry, and presently the skin develops sores and becomes red. The brother of one of our informants was said to have caught leprosy from this stream.

Kita.

Kita is a spirit that causes a man to waste away "till he too small, all bone, he no got meat." Kundakolo has drawn for us a *kita* altar in Ndaembanara with an upright stone (*ngele*) bearing a small ring (*ovala*) and a *paingosia* ornament. To the right is *Kita* himself ; on the left Rakiana, and in the middle Piruku Raŋgarānga, also *Kita*. Rakiana was explained to mean "skinny."

The man Mbuko, whose death I have described, was a case of *Kita* ; he had dwindled from a fine man to skin and bones. He did not excite compassion, but laughter among his fellows, and they announced with a smile that he would soon be dead.

There is in Ogoto a dracæna known as Njiri *Kita* ; whoever touches it will waste away.

Ave.

The word *Ave* seems, like the word *kita*, to be used both as a common noun and as a proper name, to mean an epidemic, especially dysentery, or the spirits causing it.

Ave is a spirit that makes "all people sick long house," *Tambu Koma* being given as an instance. If the first fruits are neglected the people will be smitten by *ave* that live in the bush or in the sea. There is a spirit called *Ave* that dwells in Ysabel : he flies and is red all over, has a mouth sometimes like a man's, sometimes long and full of blood : it is the blood of the men he devours.

The symptoms of *ave* are fever (?) (*mo*), cough ((*navele*), rheum (*mbele*), headache (*vitigi-mbatu*); the skin is hot and develops boils; dysentery is the result of *Ave* devouring men.

The sign of a coming epidemic is the "broken rainbow" (*mbimbigo takombu*), that is a short one. Like the long rainbow, it may also merely presage bonito. When *ave* is coming there are rainbows continually.

Njiruviri, his father Rembo, and Keoro were said to be the only ones who know how to expel *Ave*. The ceremony is called *Toka Ave*. The people all give five arm-rings to Rembo, together with much calico and tobacco. Njiruviri goes outside the house in Ogogo, or Patusogara, and utters the following words, which he revealed very reluctantly and secretly: "O Sumbi! O Gegese! O Palapoko! O Gorepoko! O you N'gengere at the foot of the sky (?)! go down, depart you; there is an end of men, an end of chiefs, an end of chieftains' wives, an end of chiefs' children; then go down and depart; do not yearn for us the fingerless, the cripple, the cramped hands¹ (?); go down and depart, oo, oo, ooo, oo!" (XXVI.) This last exclamation is uttered like a bark, then all raise a shout. Rembo distributes *anio* picked formerly in Ogogo, now in Patusogara (one informant adds a shoulder-belt). When the prayer is over, before cock-crow, the people go down the paths spitting *anio* all about; as they go they are joined by the rest of the people; they strike canoes, houses, the ground; they shout, fire guns (but blow no conches), as they make their way to Masuru on the beach (or Renjo if they live in Mbetapiro), and there throw away their sticks. In Ove they used to start from Mamanini.

We know of no animal connected with *ave*.

Onja is often associated with *ave*, and his name is given to the broken rainbow; but in *ave* all men die; in *onja* only ten or twenty. Taravai distributes a betel mixture and shoulder-belts against a small epidemic, not against a big one; but details of his charm are lacking.

Ave and other evil spirits are frightened from the house by hanging under the roof an object like a kite made out of ivory-nut leaf, and shaped with arms and legs. They call it *teve*; we have called it "scare-ghost." By swaying in the breeze it frightens the spirits.

Mateana.

Mateana is a *tomate* or spirit, but not a "man he die." He appears as a light in the sky; he may enter into the house. Once Kundakolo pointed to a rainbow and said: "There is *Mateana*"; he described it as dripping (*mimi*), and making rain (*taviti n'okoro*). This rainbow is called *mbimbigo tana Mateana* or "Mateana's rainbow." It is the long rainbow in Kundakolo's drawing as opposed to the "broken one" which is *Ave*'s. This rainbow appears when the *tagosoro* disease, which they associate with *Mateana*, is impending (close up time belong *tagosoro*); hence the

¹ The meaning seems to be: there are none but cripples left; do not love them, and stay.

name *tagosoro's* rainbow, "*mbimbigo tana tagosoro*." The same rainbow is also called "the war canoe's" (*tana ŋeto*) when it appears at sea and portends a coming raid from overseas; if no enemy appear, it is "the bonito's" (*tana iso*) and means plentiful bonito. In the drawing we see Mateana, spear in hand, riding on the rainbow, of which the body (*tinina*) is represented by zigzag lines, and is said to be like fire. He causes disease with his spear. People do not go out when Mateana is abroad; if Mateana goes away, it is plain he wants to kill a man in some other place. We do not know whether Mateana is seen to come and go, or whether they find out by divination.

The special haunts of Mateana are Velai and Pa Njale. These two places are known as far as Roviana as two out of his three haunts, Montgomery Island (Tetepare) being the third.

There is in Simbo a Mateana shrine originating from Zhava in Vella-Lavella; it consists of an altar with several upright stones (*ŋgele*). There is also a small roof under which are hung a small wooden mortar, a ring with small rings (*ovala*) tied round it, lying in the same plane, a bundle made up of a clay pipe, a feather, a *raŋgo*, a pipe shaped like a head, two *mbulau* arm-rings, a relic of the type called *lave*, an ornament (Pl. A, Fig. 4). Taravai set up the altar (*ara*), and an upright stone he found in Patu Lembu, saying: "The seat of you, Mateana, sit there." (XXVII.) He then made puddings for a burnt-offering. The ceremony was called *evevaŋa*, just like that held at a new skull-house. Taravai's wife's brother, a young boy of Kumbokota, is the priest (*iama*); a boy is chosen because he may never have had sexual intercourse. The priest eats the first pudding at sacrifices. If Taravai is angry with a man he says: "The man I am cross with, if you see him, smite him, Mateana." (XXVIII.)

Hita "knows Mateana"; he consults him by the usual method of holding out a ring as in "catching the soul." Mateana tells him the leech to call in; thus once Toka was ill; Hita held out his ring and called out various names; when Rembo's was uttered his arm went round, so Rembo was called in. Hita taught it to Johnny, our interpreter, who paid one big ring. Johnny held a small ring (*ovale*), and Hita held Johnny's arm saying, "Come down, The Mateana, to the divination with Johnny, and cross over, you the Mateana." (XXIX.) Johnny's power has left him; Mateana is angry, he does not know why.

Kundakolo, who "knows Mateana," may not eat *vama* (*barracouta* ?), a fish as long as an arm and about one inch thick; it has a mouth like a sword. It is Mateana's fish. He may not kill *alu* (kingfish ?), nor the frigate-bird and the *kakaka* among birds; he may not use the *mata kindava* tree as fuel, even when the tree is dead.

Various beings are said to be "all same Mateana," but this expression is rather vague, and may mean identical or similar.

Hita, besides Mateana, knows Njiripele ; he shares with his brother a " spirit's house " (*vona tandia tomate*) of Njiripele's in Panombu, Karivara (Pl. XVII, Fig. 1) ; under the roof hangs a bunch of small rings (*ovala*) which is Njiripele. This spirit is said to be " all same Mateana," and causes the same disease, *tagosoro*, but the cure is different.

In the bush at Sisoro is a zone where men fear to walk because Rani is there. This Rani is " all same Mateana," and that is all we know about him. There is an altar to him somewhere.

Paro.

The word *Paro* means " to come ashore." There is a spirit called Paro ; he was said to be a *tomate*, yet he was once said not to be a *tomate* ; he was also said not to be the spirit of a dead man. He has long teeth ; he may be seen as a light (*voruvu*) that comes over the sea, lands, and goes inland (*sa paro, sa panja pa na mungumuŋgu*). He causes abscesses by his blows ; a man struck by him in the belly " stinks and dies." When Widow Taru died in the hall at Tapurai, her body was carried out through that end which is tabooed to women ; on the second day Paro appeared in the house as a momentary light. This apparition was attributed to this mistake, so next day taro pap (*polo*) was made ; Kave the chief put a little in the fire at Paro's shrine, saying : " Here is the pap for you, Paro." (XXX.) His brother then took a little round to all who were present in Tapurai ; each one took a little on his finger, spread it on his palm and with it rubbed his face, head and neck ; a woman brought some more taro pap in a leaf, and we all ate of it. Kave's shrine is a small heap of stones at the foot of a coco-nut palm. Sulutava has one in Vulega ; it has only one upright stone (*nigele*), which is called Paro. If Sulutava performs a cure he burns there a bit of pudding provided by his patient saying : " This is the pudding for you, the Paro, to eat ; be propitious, and let this man live." (XXXI.) He also makes burnt offerings of first fruits. He bought his knowledge from Ŋgeluvuru, his " mother," for one ring and two arm-rings. He may not kill the *kivili* bird ; it is " all same *tomate* belong Paro." If he kills it he and his children will die.

Sea.

Considerable mystery hangs round Sea ; Rembo and Njiruviri were said to know Sea, yet Njiruviri denied it ; that was a lie, for he later admitted that he knew the cure, and also said that neither he nor Rembo could kill the sting-ray (*tape*), because it is Sea's fish ; they would fall ill if they killed it. Toka of Ove was reputed to be well informed on the subject, but would never own up. It is evident that this silence concealed some secret like " the prayer over the sacred pudding," or " the driving out of Ave."

Ndomo of Simbo says the proper home of Sea is Ove ; the Sea of Simbo is really Vera Sea is connected with Kelekele in Ove. He is mentioned along with the

gods (*tamasa*) in a prayer at the skull-house in Angi, but it was explained that he was a *tomate*, not a *tamasa*. There is an image of him on Laiti's bonito shrine in Ove.

The disease caused by Sea is called *tagosoro*, like Mateana's evil.

It was said that there was no taboo (*kenjo*) on trees under the auspices of Sea, but there is a remedy for the disease. Njiruviri rubs the side of the face with *ano*, and makes the patient eat a bit; he strokes him from the head to the stomach with *mburape* and hangs on his neck leaves of the same, and gives him crossed shoulder-belts of *mamaroko*. He says, "Let this man live; be propitious, you spirits, let him be eased; let him drink, let him eat, let him bathe, and let him go out." (XXXII.) Njiruviri described these words as a *varavara*, not a mere *pito* or saying, as most of the prayers are; yet it is in every respect like an ordinary "saying," and lacks that involved and figurative language which characterizes the *varavara* we have come across. We can only conclude that the above is merely the gist of the prayer, and not the full text.

The difference between Sea and Vera is that Vera has no upright stone (*ngele*); no burnt offerings are made, but when Ndomo goes abroad he throws about bits of pudding given him by the people of the place, saying, "Here is for you the spirit, the *Vera*." (XXXIII.) This is called "pudding throwing" (*gona yamu*). It is forbidden (*tambunana*) to do it at home. Ndomo may not kill the *vama* (*barra-couta* ?); it is the *tambu* of Vera.

VI.—Gods.

The word which I translate by god is *tamasa*. In Eddystone they do not appear to have been regarded as a kind of *tomate*. There is indeed a class of beings called *tomate tamasa*, or "god ghosts," but Njiruviri distinguishes them from *tamasa*: if a man knows the charms belonging to *tamasa* he becomes at his death a *tomate tamasa*; the *tamasa* is different—he makes all the land.

The natives distinguish two classes of gods: the gods of crops (*tamasa vuvua* or *tamasa n'aoro*), and the weather gods, or, to translate the native term literally, the gods that still the weather (*tamasa vambule*).

The gods of crops made the fruits, the private parts of men and women, coitus, land (make fruit, *njole*, *kende*, *varieti*, *peso*); the order of creation according to Keana was penis, vagina, coitus, motus copulationis.

The God of Momara.

The principal god (*tamasa kenu*) is known as the god of Momara (*tamasa pa Momara*). Momara is a spot in the northern part of the island about east of Riguruna and S.S.W. from Tapurai. The name of this god is not familiar to all, and those who claim to know it do not all agree; but the correct name seems to have been Vanavana. He it is who made the hill of Patukio, as related by Leoki.

"Come let us make two mountains and see whose is the higher," said the two gods, one god in Kolombaŋara (Nduke), one god in Eddystone. "Go ahead," they said. Then the god of this place made the hill of Patukio, and it reached almost to the sky; the god in Kolombaŋara made his mountain. "Well, mine is finished," said the god here. The god of Kolombaŋara looked this way. "Heigh! his mountain is higher than mine," said he. The god of Kolombaŋara was angry; he snatched up a rock and threw it at this hill; he did not reach as far; that stone is still standing, namely the Big Stone (*patu lavata*). He again took a stone, threw it; it missed and went too high. Then he took a rock, Patugele, and hit this hill, which broke; that is the head of the hill of Patukio. (XXXIV.)

Patu lavata is a big upright stone on the shore reef near Pepere; the second stone became Patuai near Ove; the third means "Long Stone" in the Roviana dialect; it stands opposite Renjo in the sea. The top of the mountain became Pa Na Gundu.

After this the god settled in Pa Njale, and created the people of Eddystone: he made one man and one woman. Leoki tells the story thus:—

He made one woman, one man; there was no mouth, no nose; there were no eyes; there was no penis, no anus; the legs were straight and could not bend thus; the ears had no opening. There was one woman, one man. Having finished, he looked at them: "Heigh! what shall I do to them? I have not made them well," said he. "How is it done? I will go and seek the Mad One,¹ and he will make these men for me." So the Mad One came. "Here are the men; I have made them myself, but I don't know the way." "All right, I know," said the Mad One. The Mad One took a long stone; he went. Thus he made the hands (said Leoki, cutting with a stone), thus the fingers, thus the legs, thus the mouth, thus the ear, thus the nose, thus the eyes, thus the penis; thus he made the vagina. "That is how a man is made. You, though a god, do not know. Then do not make the country; give up Pa Gasara, give up Rokombuna," said the Mad One; "thus are your fingers to be treated, O god." He broke them off and threw them away, and that is why the god did not make the country. (XXXV.)

That is why Narovo Bay is unfinished: the Mad One broke off the creator's fingers before the work was finished. Pa Gasara and Rokombuna are reefs.

The first man and woman married and had plenty of children; but in shaping them the Mad One also made them mortal.

Another legend explains why there is no taro in Eddystone and no bush-turkey's eggs in Narovo; for though the bush-turkey haunts the Narovo bush, it lays no eggs there.

"He (the god) planted taro in this country. Taro flourished, but not the banana; there was nothing but taro in this country. The bush-turkey set out from

¹ Or Mad Spirit.

Kenelo (in Mbanyata) ; it flew across Mbanyata (in Randuvu Island), and broke it in its flight, and landed in this country and settled down in Tirombambu (on the coast north of Menge) ; it made a hole, it made hot-water springs in the hot place. "Heigh ! this is a good thing for us," said the people. "I will make a pudding as a trial," said the god. He took taro and pounded it (the mortar is in Kelekelenena) ; so he pounded and turned the mortar over, but the pudding did not come out well.¹ "Oh ! taro is bad," said the god. "Do not grow, taro, in my country : go away to Vellalavella, to Ganonga, thou taro. Do not scratch holes in my country, thou bush-turkey : go to Ove. As for my country, let bananas grow in my country." (XXXVI.)

In the region of Tirombambu used to stand a village called Lape, that is Bush-Turkey, and another called Pou, or Hole. There is hot water in Mbalembalema, near Kailaki. The god's mortar is an insignificant depression in the reef near Tetege, with the pudding, a black lump of coral or rock inside.

Kundakolo has another version according to which Ngaya, the god of Zhava in Vellalavella, made the bush-turkey and hot springs. He wanted to bring some to Narovo, but the people objected and said to the bush-turkey : "Go away, lest you spoil our kanary nuts." It went off to Lologasa, where an old woman told it to stay ; so Ngaya put down three fumaroles, *neñgeneñgere*, a plant found in Tiroto, *njoili*, a plant found in Matendini, two other plants called *luluŋga* and *ivivu tamba*, a lagoon (*kosiri*), boiling springs (*mbukala*). Paroso (which Kunda calls Zhava) abounds in sulphur, fumaroles, and is the resort of bush-turkeys.

The god in Momara and the god in Nyatuloki gave the people of Eddystone their language.

I visited Momara under Leoki's guidance at the end of my stay. Leoki enjoined strict secrecy. At a turning of the path is a small open space ; on the inner side, about fifteen to twenty yards from the path, stands a *reñge* : a *reñge* is the top of a dead tree, generally four feet in height ; it is simply cut off a tree found lying in the bush. Such stumps are usually found on the shrines of gods. This *reñge* in Momara is the god ; the stumps of the branches are loaded with shell-rings (*poata*) and that ancient type of shell-ring known as *mbariki*. I was allowed to approach within some eight yards of the stump. Half-way between it and the path is the fireplace.

Close by stands a large kanary-nut tree (*ñari*) belonging to the god ; the nuts may not be picked, but the fallen ones may be eaten. There is a legend attached to it. Leoki told it first through Njiruviri as interpreter, then directly. I follow the second narrative, supplying a few details from the first.

The men of Nduke came hither and climbed a kanarium tree ; they threw down the nuts and gathered them in a heap. They broke them, they all laid them down

¹ It is sticky.

to break them ; one man alone set them upright.¹ “ Do not break them on the side ; they are sacred nuts,” said the one man. “ Nay, we will break them on the side.” “ Well, I for one will break them upright. Come, let us go.” They launched their canoe and embarked, twenty of them in one canoe. They put out to sea, and were running down to the land towards the entrance of the passage in Gizo. The flying fish leaped up. They all asked : “ What is this ? ” “ Lo, I rebuked you, but you broke the nuts on the side ; they are sacred nuts, that is why the fish fly.” They entered the passage, they looked down under the keel of the canoe ; they saw many sharks. “ You did not break the nuts properly,” said the one. “ The sharks are coming ; they will break the canoe and sink us.” The sharks leapt out and broke the canoe, and ate up nineteen of them. One swam and landed in Nduke and did not die. (XXXVII.)

Ango of Roviana, whose mother was a Narovo woman, told a fuller version, and illustrated it.

“ This is a canoe from Nduke ; the name is not known ; it is an old tale. They went to Simbo (*i.e.* Eddystone), they landed and went up to the house ; there was no one there : the owner and his wife were away in their gardens. The stranger saw a pig in the house. They said : “ There is no one in this house but a pig ; the people are gone. The pig went off, grunting as he went ; he met the pair. “ This our pig has come.” (The Nduke people meanwhile were in the house.) The pair asked the pig : “ Why do you come to us ? Have you seen anyone come to the house ? Has anyone arrived ? ” The pig said, “ Yes.” Then the Nduke men went up the sacred kanarium (*hokete hopena* in Rovianese). One man chid them and said, “ Do not go up the tree ; it is sacred, the owner has not come.” But they would not listen to him ; they broke the nuts the wrong way like small kanarium (R. *tovinia* = E. *vino*). The couple came down to the house, led by the pig. They saw the nuts had been broken the wrong way, and the husks thrown about. “ How,” they thought in their bellies, “ have they cracked these sacred nuts ? ” But they said nothing to the men of Nduke. They made a feast because they were related. When they had done, the men of Nduke wanted to go home. The chief of Simbo, owner of the nuts, remembered those nuts they had eaten : he wrapped up *nguke* in . . . and made eight similar parcels (*vesu handehande*) ; he gave them to the man who chid the others. When they left Narovo, the flying fish, came out of the water ; eight times the man threw a charm out at the stern. As they approached Gizo the canoe sank. They swam till they came to Kombukombu lavata, the steamer passage off Gizo point ; thence they swam to Kombukombuhite, a sand bank without trees. They were all safe and sound but tired, so they rested on the sand. “ We are saved,” said they, “ we shall not die ; we have crossed the

¹ The others struck them on the side to break them, but he stood them on end and struck them on the point.

big passage, there remains only the small passage near Epānga." When they had rested they said, "Let us swim across the small passage." They all perished except the man who had rebuked them for breaking the nuts the wrong way. The sharks ate them all, but the survivor reached Nduke.

Here is another story of Leoki's:—

The men of Nduke came hither to trade (*ngave*), and landed at Mbeoño in Kosigi. An old man was sitting there grinding rings on a stone. The Nduke men landed, beached the canoes, and walked along the beach to the place where he was sitting. "What are you doing?" said they. "I am making myself a ring," said he. They took the grit and daubed (*ginja*) the face of the aged chief. One man rebuked them: "Do not so; he is a big chief." "Where are the people of this place?" said the men of Nduke. "Go up (*panja*), do not speak to me; go and see the place," said the chief. So they went to Seseru: it was deserted (*ivulu*); they were all gone. They went to Sesemba: there was no one there but a pig. "Where are all the people gone to, Pig?" said they. The pig grunted, "*Ie, ie*," as if to say, "Come along." The men of Nduke went back to Seseru. The pig took some sprouting coco-nuts and gave them to the Nduke men. One mature coco-nut he took in his mouth and went to Patu Lavata; he followed the beach and went in quest of the people. He planted the coco-nut he had brought from Mbulolo, then he followed the shore to Pepere where all the people were. "The pig we left in Seseru has come," said they. "*Ie, ie, na ngalo*," said the pig, meaning the Nduke men. "The men of Nduke are there," was what he said. The pig said, "*Ngalo*, haply someone has arrived." The people went back, following the pig. They kept the strangers company (*mbaire*), and made them some puddings. They slept. "When are you going?" said the men of Seseru. "To-morrow," said the men of Nduke. They all went down to Mbeoño in Kosigi. *Vama ite* wanted to go. "The men of Nduke daubed my face in insult,"¹ said the chief. "Nay, I will go with them," said *Vama ite*; "I don't want to stay; I want to go to Nduke." "Do not go, they treated me spitefully; before this they have been to Momara and broken all my nuts." "Nay, I will go with them," said *Vama ite*. "All right, wait; I will go up to the bush," said the chief, "you want to go to Nduke badly; very well, I will go to the bush." He scraped four twigs, and made four parcels (*rausia* 4 *undeunde*). "Here, put this into your basket, the men of Nduke did me wrong; very well, put the four charms in your basket." They set out; *Vama ite* paddled stroke. They reached the passage in Gizo; the sharks came up in shoals. *Vama ite* threw one charm into the sea: they retired. "Go on, paddle, paddle every one in the canoe," said *Vama ite*. Again the sharks came up to break the canoe; he threw another charm into the sea, and all the sharks withdrew. "Paddle, paddle, we are close to the shore," said *Vama ite*. The sharks returned. "One charm

¹ *Ginja*, no good belong me.

remains ; pull hard, it is not far to the reef ; we are nearly ashore." They came to break the canoe ; he threw away his last charm. " Now we shall die," said Vama ite, " all the charms are exhausted ; if you do not pull hard, we shall die." They were close to the shore when the sharks broke the canoe, devoured the men and the planks, and there was an end of them. The man who reproved them survived. Vama ite flew away and went up to the sky to join Vama lavata. The man who rebuked them reached Nduke.

Vama ite and Vama lavata, little barracouta (?) and big barracouta (?), are two big white " clouds " (*lelei*) visible in a clear sky at night.

Pandangeto, the chief priest of the god (*iama tamasa*) in Momara may not kill crocodiles, and explains this by the following legend :—

Pinjoko lay in ambush at night (*piko*) for some raiders from Lunga. (Pinjoko lived in Pa Ngara, up in the bush of Narovo.) In the morning he found a crocodile and carried it home. He tended it and gave it food and water, gave it *iru*, *kikio*, *munjiki*, and so forth. Then he broke nuts ; the bush-turkey came and ate them out of his hand. The wild pigs came : one big and one small one. He went to Pa Ngari to eat areca-nuts and threw the husks away and the pigs ate them ; he put bananas into the firs and gave them to the pigs ; he also gave them coco-nuts ; the two pigs knew him. Pinjoko held a Great Festival (*vavolo*). Then the men of Nduke arrived in Mbulolo and went to Wavona. They did not know where Pinjoko was gone to. Now there were two shell-rings and one pig in the hamlet. " Where is he gone to ? " said the men of Nduke. " He is gone to Pa Ngari," said the ring. " Pig, go and find Pinjoko," said the ring to the pig. The pig set out to find Pinjoko. " Go to Mbulolo and show them the coco-nuts in Mbulolo ; let them climb and eat of the nuts, then come back and fetch Pinjoko." The pig led them to Mbulolo, showed them the coco-nuts, came back and went after Pinjoko. " Why does this pig come and speak to me ? " said Pinjoko, and took a stone and threw it at the pig, but the pig said : " Don't hit me ; I come to tell you the men of Nduke are come ; the ring told me to warn you." " Very well," said Pinjoko, " go ahead and tell them I am coming." The pig returned to the Nduke men in Mbulolo. " Pinjoko is coming." " Where is he ? " said the Nduke men. " He told me to come on ahead, and he would follow ; I think he will be here presently," said the pig. The pig did not stay, but went back to Pa Na Poro. Pinjoko got back to Patu lavata. When the men of Nduke saw him : " Here he comes," they said. When he arrived in Mbulolo the Nduke men said : " My word ! what we talked to was no man, but a pig and a ring ; there is no man in this place ; there is nothing but grass." " Oh ! something looks after my home," said Pinjoko. He prepared puddings for the men of Nduke and bananas. They returned in their canoe to Nduke and Pinjoko remained at home. He wanted to go back to his garden to work, but as he drew near to it the mad spirits (*tuturu*) caught him and carried him underground into the hole at Varo. Night came and they all wondered,

"Where is he gone to?" In the morning he was not to be found; they searched for him, they called out, they found his track: "Where is he gone to? Doubtless they have killed him." They saw the place where the mad spirits had caught him. "Where is he gone to?" they said, "he is dead." They found the pig, and prepared to make the Fourth Day Feast on the next day. "To-morrow we shall kill the pig," said they. The mad spirits said to Pinjoko: "We don't want to kill you; you shall go home to-morrow." The Pinjoko's men made a fire, killed the pig, and had cut it up when Pinjoko came along, his head and body covered with mud. "Where have you been? Why did you not return quickly? We have killed the pig now." Said Pinjoko: "I stayed with the mad spirits; they bade me see their Great Festival (*vavolo*) first; they would not let me go. You've killed the pig: it is well; cook it and we shall eat it." Pinjoko once went to some place of unknown name, where he was killed. The crocodile died.

At the present day the god of Momara lives underground and causes earthquakes; when he leaves Eddystone at Pa Na Kelekele or returns, there is a tidal wave and a booming sound. At Tetege, north of Pa Na Kelekele, it is forbidden to fire the grass because it is the god's. Sometimes after mid-November, when the moon is "not too big," the god fishes in Pepere, on the east coast. The tide is then so low that many fish are stranded and people go to pick them up.

Leoki showed other places sacred to this god besides Momara. Almost in a straight line from Nduli to Kosigi lies Seseru, where stands on raised ground a skull-house belonging to Pandaŋeto, the god's priest, Sinalaŋa, and Rembo, the chief. There are preserved the heads of those "who knew the god" (*kotu tamasa*), and who, at their death, become "god ghosts" (*tomate tamasa*). The skull-house, of corrugated iron, stands in the midst of a large area: there are modern rings (*poata*) and ancient ones (*mbarika*) upon it. Pandaŋeto, as priest (*iama tamasa*), makes a fire at the foot of it to offer up the first-fruits of the nuts, while Mbiu, the mortuary priest (*iama tomate*), strings nuts (*susuni*) on the vein of a coco-nut leaf. On the right of the skull-house stands the upright stone (*ŋgele*), Pandaŋeto's war shrine (*kinindi*); in front of the skull-house, on the lower level, is the common fire; on the same level a few paces to the right lies Panda's *Patu Petapeta*, a stone also connected with war, and beside it grows a *njanjala* tree.

In Ogoga there are blocks of stone all overgrown; but there was some difference as to whether it was sacred to the god or not.

Njoka, one of the leaders in the great procession (*votu tamasa*) mentioned Inusa, where stand an upright stone (*ŋgele*) and a *vonjamboe* tree.

In Pakarau the god is represented by two trees, a *ŋgema* and a *moe*. There are no stones.

Ogoga and Pakarau lie on the way from Seseru to Momara.

The Goddess of Nyatuloki.

Second in the order of precedence comes the goddess of Nyatuloki (*tamasa pa Nyatuloki*). She is also called "the old woman of Nyatuloki" (*ngoele pa Nyatuloki*). Pore Ite of Simbo may not kill the crocodile, the shark and the centipede, because they are sacred to this goddess; he is not a priest at Nyatuloki, but at Ndaepango, which belongs to her also. Ngea used to minister (*iama*) at Nyatuloki, but with him perished most of the lore.

Once the goddess was angry with him, and he had a wry-neck; he divined by the swaying of his canoe, *mbegolo*, as it is called, and prayed, and all was right again. Such a wry-neck is called *pin duria tamasa*.

The goddess can cause the north-west wind to blow.

We never saw Nyatuloki; they say there is a sacred stump (*reñge*) there. In Nāriseru, towards Ogogo, are kept the skulls of those who "know" this goddess (*kotu tamasa*). Pa Na Kōngu, between Olepeninga and Tumbi, belongs to her. In Marundu she has a stump (*reñge*) (Pl. XVII, Fig. 1). Mboe, further down the coast, has a stump also, they say: it is the place where the goddess sits down.

The God of Pa Tamasa.

Third comes the god of Pa Tamasa (*tamasa pa Tamasa*). His seat is at Pa Tamasa, "At the God," a little way inland of Nagasaululu on the east coast. There I saw two tree-trunks called *reñge paroparo* and *reñge sogara*, that is, "stranded stump" and "scolding trunk." Their story is told by Leoki thus:—

The plain between Patukio and Momara was once covered by the sea which extended from Riguruna to Renjo; the waves went as far as Vinjara. "Why does the sea come here? I think if you plant food here it will be no good," said the god of Pa Tamasa, who came from Mburavusu.¹ A stump (*reñge*) floated hither, a shell-ring still stuck on one of its arms. It was stranded in Njanjala. "A stump has been stranded in Njanjala," said the people, "let us divine with a shell-ring (*sambukai*)." "I want to stop here and keep the sea away," said the *reñge*. "Where shall we set you up?" they said. "Go to Pa Tamasa and leave me there," said he. He was set up there; that is why the sea does not come through.

Magoana.

This legend seems to identify the god of Pa Tamasa with Magoana, generally known as "the god of Mburavusu" (*tamasa pa Mburavusu*).

Ango, the Rovianese, tells the following legend about him:—

Magoana lived in Simbo (meaning Eddystone). He put his nuts and property in the spathe of a banana (*pokopokona hakua*), and came to Mburavusu; he came back to Ikotivi, his wife, and to his children. He looked for his orange-stained ring

¹ Near Roviana.

(*mbakiha*). "Where is my ring?" His wife said, "I don't know." "Where have you put my ring?" said he to his wife and children. His wife was cross because he had stayed away in Simbo; she did not tell the truth. "That ring," she said, "I threw it into the sea." So Magoana dived to seek it. (Pl. XIX, Fig. 1.)

Now we see him at the bottom of the sea, where he stayed with three men: Vama Ite, Vama Lavata and their father. At the end of eight days he took his orange-stained ring and prepared to go. Now this coco-nut you see in the drawing is not big, but small like a sprout. The three men bade Magoana take a snake and bind his feet to climb the coco-nut; Magoana was afraid of the snake and put his ring on his feet and climbed it, carrying a bunch of bananas of the kind called *hakua rungha*, which had been given by those three men. As he climbed the sprouting coco-nut it began to grow. As he went up he ate the bananas and the skins fell on the top of the house, which was now lower than the palm. On reaching the surface he took one coco-nut and walked home with it and the ring. Now the name of the canoe he had made out of a banana spathe was Utu Mola. He went up to his house, took all his chattels and put them on board the Utu Mola and went back to Simbo. He planted the coco-nut, which was a king coco-nut (*nohara tige*), and now there are plenty in Simbo. He planted his Utu Mola too, and there are plenty of those bananas in Simbo. And that's the end.

The ring An'go believed to be still in the possession of Siana, Rembo's wife, but it is really in the Cambridge Museum. The *rungha* banana is small and white; the kind called *utu mola* is big and thick and the stem is high. These bananas are sacred (*hopena*) in so far as the two sexes may not eat of the same bunch. This is only observed by those who know the legend.

The inverted canoe in the drawing belongs to another legend which will be told in Roviana.

Magoana died in Nduke. His thigh-bones are kept in the skull-house at An'gi, which was spoken of once as "the god's house" (*vonā tamasa*). These bones are said to be crossed (*kai*); they are human and white like the blade of a penknife; they often disappear; they go off to steal rings, ancient and modern (*mbariki*, *poata*), of the gods of Nduke, and leave them on the beach in Pepere and Gago; men finding them hang them on a tree by the shore.

Magoana can raise the South-west wind.

Various Gods.

Fourth comes the god of Narivindavinda (*tamasa pa N.*). He is said to have been represented by a stump (*re'inge*) with four arms.

The fifth is the god of Sosoi (*tamasa pa S.*). Sosoi is somewhere north of Narovo Bay. I saw there four big broad stones standing (*ingele*), many slabs lying, a number of *vonjamboe* trees with half-shells of coco-nut stuck on the branches;

there were some unfinished rings of *mbulau* and one ornament like a *mbarava* lying on the ground ; next to the upright stones was a fireplace to cook bananas, but there was no fireplace for burnt offerings. This god is said to be one with the god of Tiroto, which, if I can trust memory, lies on the way to Sosoi. The god of Tiroto stole (*iko*) water from Tiroto in Ulusage and brought it in a leaf of *vilaki* to Tiroto in Narovo. He also planted there a tree called *njiri gogoto*, or "true *dracæna*," which is not found elsewhere in the island.

Sixth is the god of Vaire.

The Flying Chief.

Mbanara pu tatava, or "the chief that flies," comes last. His shrine is in Narovo, south of Patu Kio, close to the confines of Ove. It lies on the overland track from Ove to Narovo. They say there is a big stone there and one shell-ring. Kundakolo indeed said he was not a god, but a Mateana ; but his statement is against all evidence.

At the New Year they make puddings at his shrine if the nuts are abundant ; otherwise they merely cook bananas.

I give his legend as told by Kundakolo with additions from the version told by Pandangeto, who is priest there (*iama tamasa*).

The men of Lape were fishing for bonito ; they used as hook a thorn called *vetuguvetugu tana mao* (Panda says *mumu gaili* or *gaile*). If it was strong a man might catch one or two bonitoes ; otherwise it broke and he caught nothing. The Flying Chief set out to fish, and went to Ove, to the chief on this side of Ove. Ganjolo was there making hooks of pearl-shell. "There's a man there ; I will go up to him," said the chief, "I will speak to him." He landed and saw the hooks Ganjolo was making drying in the sun. "He ! Ho ! What's that you are drying in the sun ?" "These are my fish-hooks ; I use them to catch bonito," said Ganjolo. "Well, give me one ; mine are different ; I use *vetuguvetugu pa na mao*." "All right, but do not show them to the others ; here's one, keep it, but do not let any one see it," said Ganjolo, and gave him one. The Flying Chief embarked in his canoe ; he held the hook in his closed hand so that no one should see it ; he threw away the thorn and tied his pearl-shell hook instead ; he went out to sea in quest of bonito. "Go ahead, scoop the water."¹ He caught one bonito and shook it off the hook : he would not give it them to unhook lest they should see the pearl-shell. The canoe was soon full. They caught one hundred, so they blew the conch. When the people returned some had two or three. "Oh ho !" said they, "you have caught plenty ; your hook is strong (or, "you have power")." He took off the pearl-shell and tied the thorn on the line and put the bamboo rod to dry in the sun. Next day there was fishing again : the chief caught ninety, next day eighty, while the

¹ *Pio* : this will be explained in the chapter on fishing.

rest caught two or three. He went out one day and caught seventy ; he went out one day (*sage kami rani*) and caught sixty ; he went out one day and caught fifty (and so on, thirty, twenty, ten, nine, eight, seven, six, five, four, three, two, one, none). When he left the canoe they found his hook in the stern. "You deceived us," they said, "we thought it was *muma gaili*, but it is not." The men of Pou¹ and Lape came down to fight him : "Why did you not show us that hook before ? If you had shown it us we should have asked for one or two." They took their spears and threw them at him : they could not hit him save on the little finger, but he was killed. "Let us carry him inland," they said. So they carried him off to bury him. "Will this do ?" said they. "No," answered he,² "the men of Pou and Lape killed me and they are not far." They came to Inusa : "Let us leave him here," they said, but the Flying Chief refused. After a rest they came to Tirombambu : "This is a suitable place, let us leave him here." "I will not have it," said he, "I can see Pou and Lape." They went to Mbolema. "This is a suitable place, let us leave him here." "No," said the Flying Chief, "I can see Pou and Lape." They went on to Tovutovu. "This will do," said they, "we cannot see Lape and Pou ; let us put him down here in Tambu Leve." They laid a big stone over him and left a ring. "In four days, come and see me," he said to his men. After four days they went to see : he came out and flew away in the air. He was incensed against the men of Katapana who had killed him, and said the men of Ove, Karivara, Simbo, and Panullu would catch bonito and fish, but the people of Katapana would have to live on pig and crab, and anything in the bush ; when the other districts cooked fish, the men of Lape and Pou would smell it but would get none. Moreover, they would be addicted to lust and even incest.

That is why the people of Narovo, excepting Panullu, were a bush folk till quite recently, knowing not how to build canoes or catch fish, and their rapes caused constant trouble with their neighbours (Pt. I, p. 76).

Kundakolo has illustrated the legend of N'gangai and Flying Chief (Pl. XIX, Fig. 2) : to the left stands Kōnga, an island near Vila in the strait between Nduke and Lokuru (Arundel Island in the chart) ; the trees upon it are *kikindova* and *mbirimbi* ; the large tree is *ragana*. N'gangai is represented as an octopus ; Flying Chief, with a long snake-like body, is "journeying in the air" (*nggi soana pa nullu*) ; he carries a spear in one hand and a basket in the other.

"N'gangai come and kill the *eau* (clam) that wants to kill us," said the men of Nduke. N'gangai went by sea ; Flying Chief flew in the air, and they arrived in Kōnga and rested there. Then N'gangai dived down to find the *eau*, and with his four tentacles (literally, hairs), caught the *eau* and killed it. The rings carried by Flying Chief are the pay given by the men of Nduke.

¹ I sometimes spelt Ou, probably mistaking P for the preposition.

² Presumably divination was used.

It was agreed on all hands that Narovo was the land of the gods of crops (*tamasa vuvua*). The other districts have their gods of crops, but it is admitted that they come from Narovo.

Tokutoku.

The people of Ove have a god at Kulipi in the bush, called Tokutoku ; Kave gave his name as Karivara-ove, which certainly is not his real name. He also classed him as a god-ghost (*tomate tamasa*), because he was a man and god and then died ; in fact, it was this god that Kave gave as an example in answer to the question, What is *tomate tamasa* ? Pandangeto, on the other hand, says he is not *tomate tamasa*, but *tamasa*. Pinju is silent on the subject. There is in Kulipi a big stump (*reŋge*) with four branches ; *mbulau* rings on one branch, small rings (*ovala*) on the second, arm-rings on the third, and large rings on the fourth. We have not seen it. Pinju, the priest, has nothing to say about this god apart from the ceremonies ; he gives as alternative title, "god of the mountain" (*tamasa pa na solosolo*) : he is a god of crops ; if he is propitious to the nuts (*vino, ŋari, ivi, rupe*) and bread-fruit, they bear (*na vino*, etc. . . . *sa manani ko sa vua*). At each New Year Pinju is the first to climb the nut trees : he then goes to visit the god, breaks nuts, and puts them underneath a stone, after which he puts on a shoulder-belt of *mamaroko* : while offering the nuts he says : "This is yours, the god in the sea, yours the god of Tokutoku, yours the *ale*, shark, the red ant, the *ndui* . . . , the centipede, the wasp." (XXVIII.) When he gets up in the morning to go to the god, and when he returns no one speaks to him ; if any one does he gets a wry-neck, which Pinju cures by whipping (*iru*) with a dracæna the inside of the house, saying : "I whip you away, the god of N'Oka, and let this man here live."

Pinju may not kill sharks or crocodiles, because they belong to the god of Kulipi. He may kill the black ant (*kandiki*), which is frequently mentioned in prayers to gods, but it is only ceremonial language (*varavara*) ; the suggestion that it might be taboo seemed to amuse a bystander.

Tirolivotu.

There is a god's shrine in Tirolivotu. I saw nothing but skull-houses there, so these must also be the shrines of gods.

Mboembanara and Ingembanara.

On Matendini in Karivara stands a heap of stones with a stump (*reŋge*) (Pl. XVII, Fig. 2), bearing an ancient ring (*mbariki*) and *mbulau* rings. Close to it is an open space with red soil and stones whence steam arises ; there is also an artificial heap of stones through which issues a little steam, but not enough to prevent sitting upon it. The name of this god is Inge Mbanara, known as the old woman

of Matendini (*ngoele pa Matendini*). Her husband was Mboembanara, a chief. Here is their legend :—

Once upon a time the men of Karivara built a canoe; they launched it, went out to fish, and caught bonito and landed it. Ganjolo was seated on a tree on the beach. Inge Mbanara came and took the fish from Mboembanara and set out to Matendini; Ganjolo saw her as she passed over a big trunk across the path. As she stepped over her clothing fell, and Ganjolo saw her private parts. Said he, "What's this?" He had connection with her. The people of Karivara in their anger drove him out of their district. Mboembanara hearing of it, said to his children, "Well, since the man of Simbo has stolen my wife, you remain here in Matendini; presently you shall see me." Then Mboembanara went out to the deep sea and stayed there. His two children on Matendini wept when they saw their father go into the sea, and wept day and night. After a time Mboembanara rose to the surface to see his two children in Matendini. His children saw him and said: "Our father has come up again." Where Mboembanara appeared there arose a big reef. Then Mboembanara dived again and came up farther off, and another reef marked the place. The two children saw him and said, "Our father has come up again." They cried and their father hearing them said: "My two children cry continually." Mboembanara dived down for good; his children could not see him, and ceased to cry. Where they wept no tree will grow.

Such is Rakoto's version. Sulutava makes Mboembanara go to bathe at Mbanara. Veonona, the god of Nduke, came and took him away to another country on the other side of the deep sea. Ingembanara flew up to the sky, and did not return. They had no children, he says. Ganjolo was told by the Karivara people to leave their district, because he was an adulterer (*mbarambarata*). He sat down in Olomo: the men of Simbo saw him and called him over: so he abandoned his original home in Matendini, and settled in Simbo. The people of that place built a fleet (*pitu mola*) of four fishing canoes: one belonged to Ganjolo, one to Pengipengi, one to Panakongu, one to Genjala. They launched their canoes to go out fishing: "We don't want the canoe of a man who debauched another man's wife," said they. So they went out after bonito, leaving Ganjolo's canoe in the canoe house. Four days the people fished and caught nothing. Now there were four brothers there, and Ganjolo said to them: "At noon we shall launch the canoe and go forth." At noon they launched their canoe and went out to sea and caught fifty bonitos. These they hung upon a tree. The canoes of Simbo returned. "Koi," said they, "who has caught all this bonito?" For they had gone even beyond Tapurai in search of bonito, but Ganjolo had remained close to Simbo, and caught plenty and hung them on a tree. The chief of Pengipengi gave Ganjolo one orange-stained ring (*mbakia*). "Very well," said Ganjolo, "to-morrow let all the canoes put forth to catch bonito." The bonito came in shoals: they caught plenty and went home.

When Ganjolo died, his head was buried in the ground in Kuve where there are skull-houses. Sututava found it, and put it in his bonito shrine in Vuragare because he is a spirit of the bonito shrine (*tomate inaru*). Ganjolo has been called a god in the legends, but both Ndomo and Sulutava declared he was a man who had a bonito shrine (*inaru*), not a god.

The shrine in Matendini is for bonito as well as for crops, but no one uses it now. The old woman of Matendini is also called a "bonito shrine goddess" (*tamasa inaru*). (By the way, there is a shrine belonging to a "bonito god" (*tamasa iso*) in Pa Na Gundu. There is a sacred stump there.)

Any one visiting Matendini for the first time must stand on the "Jumping stones" (*patu gasa*), and jump four times, then he must go to the "breaking stone" (*patu poraporaka*), which lies close to the god, and dash to pieces on it a shell. Then he drinks four times out of any leaf, and goes to wash and put on lime. If he does not carry out these prescriptions he will fall ill.

There is in Titiro, Karivara, a plantation shrine (*tagoro*), which is said to belong to a god. There is no stump (*reñge*). It was said that Lepo, the mortuary priest of Karivara, would offer first-fruits there with the words: "Here is the pudding for you the ghosts, the gods, the *ndui*, the red ant, the black ant, when you see us at sea, up trees, be propitious." (XL.) The prayer mentions everything "he savvy fight (or bite), fashion belong *tamasa* old time before." Kundakolo says that Titiro is only a skull-house.

The God of Ndaipaño.

Simbo has a shrine in Ndaipaño. Poreite is the priest; he says there is no stump (*reñge*). Ndomo says there are no crop gods in Simbo and Ndaipaño is the seat of a spirit (*tomate*). Pore speaks of this being both a *tomate* and a *tomate tamasa*. The shrine is also a plantation shrine (*tagoro*). The prayer used at the Smoked Nut Festival runs: "Here is yours, the gods, the ghosts, the chiefly dead; I eat the new smoked nuts, the *ndui*, the red ant, the black ant, the centipede, the crocodile, the shark, the hermit crab . . . be propitious." (XLI.) ("He call all thing he savvy fight.")

According to Pore some people who lived in Nyatuloki came to Ndaipaño; thence they went to Titiro and thence to Koluka, so that there are now three god ghosts (*tomate tamasa*).

Ndaipaño is the only shrine where Pore Ite ministers. He may not kill sharks, crocodiles, or centipedes; they are the animals of the goddess of Nyatuloki.

The Coming forth of the Gods.

Leoki says: "The offerings at the skull-house are not sacred (*tambu*); but the cult of the gods is sacred indeed (*tambuna sosoto*)." Which is the native way of saying "The god's cult is more sacred than the ghost's." The cult of the gods was

indeed kept strictly secret, but at the time of my second visit, Leoki, running short of stories, and of tobacco, told me the ceremonial after enjoining strict secrecy, especially towards the leaders and Njiruviri. He appears, however, to have been given away by the interpreter. His information was checked by reference to leaders in the ceremonies.

It so happened that the cult was about to be held, for "The god was cold" (*sa lomoſo na tamasa*); no bananas had been cooked for him, so he was angry, and the crops were poor, and besides the parrots (*makara*) and bats were consuming the bananas.

The ceremony is called *vodu tamasa*, which appears to mean "the coming forth of the gods." It is not held periodically, like the ghost cult, but only when they think of it. "Some years they do it, some years they don't," says Kundakolo. "If they like they go, if they don't like they don't go."

Of the four priests of the god of Momara, Pandaŋeto is the chief. His predecessors were Gaolo, Suloko, Sambu. Their heads are not in Saseru, but the skull-house there was none the less spoken of as his.

Panda was consecrated according to his own description thus:—Sambu, his "father" predecessor, scraped one branch of large kanarium (*nari*) and one branch of *tumbi*, and rumbled up one rotten leaf of *rusi* and wrapped the three up separately. Panda then took the *nari*, and placing each hand on the opposite shoulder, he rubbed his body down to the feet four times; this he repeated with the *tumbi* and the *rusi*: then sitting down with crossed legs he rubbed the sole of each foot from heel to the toes with the opposite hand (the right foot with the left hand and vice versa). This is valid at once for the gods of Momara, Pa Tamasa, Narivindavinda, Tambuleve.

Concerning the ordination of the others we know nothing excepting Pinju. He holds office by heredity; his predecessor instructed him but used no charm (*potana*). The presumptive successors of Pinju are Sarakile, then Matanjonja, then Onde.

On November 30th, 1908, Pandaŋeto and Vigu went together to Simbo to seek for the god's bananas (*vundi tamasa*). These are of the kind called *vundi para*; they are short and thick, with a yellowish skin and flesh. These bananas are necessary in order to "do the god" (*taviti tamasa*), and the people were somewhat in a fix as the god was angry, and they could not find the right sort. Panda failed on that day, and so the ceremony did not take place till the interval between my second and third visit.

Pandaŋeto selects a bunch of unripe *vundi para* about the size of a finger, that the god may see that the food is bad "and pity us" (*taruniŋgai*). He takes them to Saseru and leaves them there. A bunch of king coco-nuts is selected with unripe nuts (*mbika*) of the size of areca-nuts, and taken to Saseru, where they are left like the other offerings, without a prayer. Then everyone goes to get ten bunches of

coco-nuts from Varingaru on the east coast ; any kind will do and in any stage of growth at which they are edible (*sura*, *mbulo*, *karukaru*), but they are not to be allowed to drop ; they must be lowered with a rope. These are also taken to Saseru. Lastly, they gather bananas of any kind and from any garden without regard to property. They tie them with *mamaroko* to sticks of *ugugu*, placing the stem alongside the stick, the base of the stem (*vuna*) being against the stick, and the tip (*mbatuna*) projecting beyond it. They leave the bananas with the coco-nuts together and add one yam. They all take part in these preparations ; no one stays at home. Four twigs of *vonjamboe* are severally inserted into a *paŋgosia*, an arm-ring, and two *mbulau* rings, and taken to Saseru.

Next day they go back to Saseru to convey all these things up to Momara. Pandaŋgeto goes first carrying the *paŋgosia*, Rembo follows with an arm-ring, Vigu comes third, and Matekolo fourth, each bearing a *mbulau*. Watasa, Rembo's youngest son, follows with the king coco-nuts, then the bearers of the ordinary nuts carrying them on the right shoulder only ; then come forty banana bearers led by the one with the *vundi para* ; Mia pitu closes the procession with the yam. This function is reserved for an only son. They may not use their tomahawks to hang the coco-nuts on, but cut branches of any fruit-bearing tree, such as *sakita*. They wear leaves of the *pari pari* fern on their heads. No one may go unless he carries something ; children who can "walk about strong" are admitted. If any coco-nut falls on the way it is left, but the owner proceeds. As they go they sing out *ō*, *ē* ; it is not clear whether they do so all the way, or at what point they begin. They first go to Inusa, halt and count the coco-nuts, and then resume their march wailing (*lukana*) "mm" ; this wailing is probably the same as we have written down above as *ō*, *ē*. In Pakarau, a place where the god sits down, they deposit the bananas in a row on one side of the root of a tree, and the coco-nuts on the other side along the track, and count them. They set out again and about Mimimau, as they draw near to the god, they begin to cry out : "*Ivi ō, rupe ō, mbeta ō, ŋari, vino, sakita, vundi, sika*,"¹ etc., naming all the plants that yield food. In Momara they put down their burdens and stick their clubs or tomahawks in the ground in a row ; they count the coco-nuts, remove the sticks used to carry them, and pile these up ; they go and sit down some twenty yards from the shrine. The four priests (*iama*) sit down on an altar close to the god ; Pandaŋgeto hangs the rings on the *reŋge* without a prayer ; the other priests may not touch it. The people go to get firewood and sticks, and husk the nuts ; any kind of wood is used. While the priests cook the bananas, Njoka skins the first bunch, the other people follow. They tear off the nuts by wringing them round and round ; it is taboo to pull them off ; if the shell breaks in the husking, the nut is thrown away ; the rest are set down beside the *iama*, who break them but do not drink the milk. When the bananas are cooked

¹ Tahitian chestnut, *rupe*, bread-fruit, large and small kanarium, *sakita*, banana, taro.

the *iama* say "Let us give food to them all." They accordingly stand one at each corner of the fire, two by the coco-nuts and two by the bananas, and hurl them at the people; to hand them over is forbidden; if anyone wants fire to smoke, it is thrown at him; if he has a shield, they aim at him, otherwise they throw anywhere. The yam is reserved for the god. When the turn comes for the priests to eat, Pandangeto places the food on four leaves of *ekolo*, and lays it on his forearm, the upper part of his arm being close to the body; when the other priests want to take it, he lets it fall. The raw bananas (*vundi para*) and the king coco-nuts are laid beside the god and left there to rot: they are his share. There is no prayer. After the food has been eaten, Rembo questions the god by the usual method of divination. When the ceremony took place in 1908, the god told them no one had visited him, so he caused the flying foxes and parrots to eat their food; they had now come to him; they would "stop quiet"; there would be no more parrots or flying-foxes; they would make puddings and kill pigs. Then they go home in the reverse order to that in which they came: the man who came up last takes his tomahawk out first, and they set off at a run; if anyone trips up and falls, the others place their foot on his body as they run by.

Women do not walk about in Narovo for the next three days; Sina (*alias* Henakivara), Rembo's wife, is the first to go abroad; they all put on a shoulder belt of *ekeki* and pendants of two *geligeliongili* and two *paripari* on that occasion. Women may never go up to the *tamasa* places.

Some time elapses between this ceremony and that at Nyatuloki.¹ The one at Momara took place in the first half of December; they had not yet gone to Nyatuloki on January 4th. It is quite possible though that the presence of an inquisitive white man put it off. The *vundi para*, king coco-nuts, and the ordinary bananas and coco-nuts are left in Panakongu on the first day. The coco-nuts must be lowered down and not allowed to fall. There is no yam. Next day they go to get the nuts from Panakongu and set out for Nyatuloki. Lumbi leads the way with a *paingosia*; then come Rinju with a large ring; Ngurunguru with an arm-ring, and Atolo last of the four priests (*iama*) with a *mbulau* ring; Ngora pitu carries the king coco-nuts and Nenda the *vundi para*. The first half is at the *reŋge* in Marondu; there they count the coco-nuts; in Mboe they count them again; there is no *reŋge* there. Then they call out the names of all the food-bearing plants on the way. In Nyatuloki the coco-nuts are again counted, then Lumbi hangs the rings on the *reŋge*; they all make an oven, whereas in Momara they roast the food; the coco-nuts are skinned and handed, not thrown; any man gives the priests their food. Then Njuki questions the goddess. They return at a run in inverted order. If anyone fall they place their foot on him.

¹ Summary by Alembule, detail by Nioka.

In *Pa tamasa* the order of the procession is Pandaŋgeto with a *paŋgosia*. Rembo with a large ring, Vigu with a *mbulau* ring, and Misi also with a *mbulau*; other men go but carry neither bananas nor nuts. They call out the names of food plants. After Pandaŋgeto has hung up the rings without a prayer, they go to get coco-nuts, husk them in the bush; bananas are brought and baked or roasted. The food is distributed, not thrown, and none is left for the god. Rembo questions the god, then they walk off and go to bathe in the sea.

Narivindavinda is the next shrine to be visited. There are only two priests: Pandaŋgeto again carries the *paŋgosia*; followed by Rembo with a *mbulau*; this according to Njoka, but Panda himself, who ought to know, says himself and Lumbi are the priests. A few men go with them carrying any kind of bananas, sweet yams (*ndikindiki*) and nuts. They call out the names of food plants on the way. Puddings are made, but not used for burnt offerings: "They don't make a burnt offering," said Njoka, "it is a god, you know." (*Ŋgara ke vavamiro: na tamasa ke.*) Pandaŋgeto says there is no prayer over the food: "It is not a skull-house," he explained. Njoka, however, records the following prayer used in putting the rings on the *reŋge*: "This is the presentation to thee, the god, let me not be straitened, let me not die, let the bananas bear, the sweet yams grow big; let the *rupe* bear, let the *ivi* bear, let the banana bear big fruit, the sweet yam grow big; open thy hand, thou god, and let me live." (XLII.) No food is left for the god. Rembo does the divining.

The next shrine to be honoured is that in Sosoi. The two priests are Vigu, who carries the *paŋgosia*, and Rembo with a *mbulau*. One man carries *vundi lalauru*, a large kind of banana; a few men go with them and carry bananas and coco-nuts; there is no pause on the way. The nuts are husked in the bush, and they select large ones. They leave no food for the god. Vigu hangs up the rings without a prayer.

In Vaire which comes next, Lumbi carries a large ring and a *paŋgosia*; he alone is a priest; Nenda and Njukili accompany him with *vundi lalauru*. They cook the bananas, but leave none for the god.

The ceremony at Tambu Leve is the last in Narovo; it only has two priests; Pandaŋgeto who carries the *paŋgosia*, and Rembo who carries the *mbulau*; Kalapa, Rembo's son, bears the basket of the priests (*mani iama*) containing *nari* nuts. Njiruviri also goes. They take sweet yams with them and make puddings; at least Njoka says so, but he may have confused the yearly offerings of first-fruits with the *votu tamasa*, for Pandaŋgeto says they cook bananas only. They agree, however, that an opossum is cooked and eaten; the god instructs them where to find one through divination with a shell ring (*sambukai*). There is no prayer. Those present may not eat much (*manoto*); they are soon satiated (little bit he *kaikai*, he full up quick): this is a "*tambu*" peculiar to Tambu Leve. Rembo speaks to the god.

The other districts begin their ceremonies when those of Narovo are over. Kundakolo says in Ove they go to Matendini after the rites at Momara and Nyatuloki are over.

In Ove they start from Votuai. Pinju, our informant, leads with a *mbulau* ring; any man follows. Sarakile, his heir, carries a bunch of mature *vundi lalauru*; the rest carry bananas and coco-nuts of any kind; there are no king coco-nuts. They go to Kulipi without a halt; they roast *vundi lalauru*; Sarakile eats first and then the others; the remaining bananas are then roasted and eaten indiscriminately, the skins being left about. Sarakile and Ngeo skin coco-nuts, put the skins in a heap, and distribute the nuts. Pinju takes a ring with a stick of *njanjala* passed through it, leaves the *njanjala* on the ground, and puts the ring "on the god" with the words, "Here is yours, the god: be propitious to the crops, and let the food grow; be propitious and let the bonito leap forth." (XLIII.) There is no burnt offering or prayer when the Choiseul bananas (*vundi lalauru*) are cooked. They return in single file and inverted order.

Kundakolo describes the ritual at Matendini thus:—

If they want to make food and coco-nuts abundant (make *kaikai* and coco-nuts alive) they gather coco-nuts in all stages at which they are fit to drink or eat, and Choiseul bananas (*vundi lalauru*). The bunches are carried on sticks of *lembu*, *rupe*, Malay apple, or any fruit-bearing tree. No one may go empty-handed. They rest in Minjana, Polomule, where there is a hot spring, and Manoga Lima, about which place they begin to wail: "Hungry oh! hungry oh!" (*mburana o, mburana o*). The halts are intended as a rest, nothing is done there. When arrived at the top they leave their clubs anywhere. Lumbi, the priest, does not go and sit next to the god, but with the crowd; the bananas are cooked and eaten along with the coco-nuts; the food is handed, not thrown. There is no offering of any kind. The sticks used to carry the bunches are taken from the *lembu*, *rupe*, Malay apple, or any fruit-bearing tree, and are piled up beside the sacred stump (*reŋge*); this, says Kundakolo, applies to all gods. Lumbi puts the ring (*ovala*) on the stump with the words: "Be propitious, thou god here. I have come to thee, thou god; be propitious; let the banana trees bear, the coco-nut palms bear; I am hungry, so let them bear." (XLIV.)

Weather Gods.

The weather gods cause storms. The charm by which he is induced to raise a storm is called his *ranimboŋi*; *rani* means day and *mboŋi* night, so that it is a "day turned to night," that is simply a tempest. To still the weather is *vambule*.

Sogaviri bought a charm (*vagivambule*) to raise the north-west wind, and paid one arm-ring for it, though he has never used it. He takes a piece of *piku* wood, which he ties with any kind of creeper, and sets it afloat on the waters; he calls

the wind : " Come ashore, rage " (*mu paro tu, mu nanulu*). Soga has used the charm to lay (*vambule*) a north-westerly gale : he ties the stem of a piro plant round a branch of a *vonjamboe* that grows on the altar (*ara*) ; he then walks out in the sea with arms extended forward, as if to swim, then with four leaves of *mbuni* bails the water, saying : " Be still, go out to sea, thou salt water, and cease rain, be still." (XLV.) The same charm is used for rain.

Both Njiruviri and Rembo know Magoana's gale (*ranimboni*). Anjo, the narrator of the legend, also knows it.

Hiro, half Rovianese, half Ysabellian, sold us an object consisting of a stick of *ekolo* with a *mbulau* ring tied on each side with the *lave* creeper ; a section of a spiral shell (*ranjo*) is tied on either side of the tip of this stick. It is a copy of his Rovianese father's charm. It is stuck in the shield when they go abroad, its object is to prevent storms. If a gale does come, Hiro says : " Clear up, Mburavusu, clear up, Koluka, clear up in Leoko " (*Mbule Mb., Mbule K., Mbule pa L.*). Pa Leoko is in Gizo ; Koluka is the skull-house in Simbo.

Gaputu has in Kuve a shrine dedicated to the god Mburavusu, who is described as a god in the sea (*tamasa pa n'ivere*) ; it is in the shape of a Roviana skull wrapper (*kukupolo*). Next to it is a *njanjala* tree with a ring, one *mbarava*, one small ring (*ovala*) and some unfinished *mbulau* rings.

Koluka lies with Kuve and Tiroagele on a small plateau called Patu Mbou. where they " hide their dead " ; one side is sheer down, the other fairly steep. In Koluka itself is a chief's skull-house (*tambuna mate mbanara*) hung with rings ancient (*mbariki*) and modern (*poata*) ; beside it, in a bush of *piro*, stands a mouldy broken stump representing the god. Before it lie seven big stones called the " Seven Priests " (*kavitu iama*) : no one may walk there. There is a big slab of stone called *patu petapeta* on which pudding is left for the dead but is not burnt. Underneath it is a conch shell, blown when the skull-house is rebuilt. There are no legends about the god.

Rondi and Ndomo both know the charm of the god of Koluka (*tamasa Koluka*), but not the original shrine : they both go to Tiroagele near Koluka. Rondi, to still the wind, takes a leaf of *piro*, tears the blade some way down both sides of the central vein, ties it round a stick, and puts it in Tiroagele. When he travels by sea he takes with him the talisman that hangs in his canoe-house ; if a gale overtakes him he stills the waves with the words, " *Mbule pa Koluka.*" Lemese of Simbo was Rondi's teacher.

Ndomo hangs up a *piro* leaf in Tiroagele on the skull-house ; he puts a creeper called *miroreo* into the sea. In his canoe he puts a *pangosia* and a creeper called *ekeke* forward and *kou* aft. Both when he hangs up the *piro* and sets out to sea he says : " Be calm, you the gods, the ghosts, you five gods of Koluka " (*Mbule gau na tamasa, na tomate, gau kalima tamasa pa Koluka*).

Ngāngai.

Ngāngai is an octopus ; his abode is in Parokea at the foot of a rock, but he sometimes goes to Choiseul. Rove of Nduke says he is known only in Vellalavella and Mandegusu. It was Ngāngai who bade the people blow the conch when the skull-houses in Nāriseru, Kindava and Tirolivotu were completed. He is a thievish god (*tamasa ikiko*) : he steals rings from the shrines of gods and spirits and leaves them in Parokea. He follows canoes to sea ; if a gale arises, he comes underneath and prevents the craft from capsizing. Once Roṅgana and Leoki (who related the incident) were sleeping together in Velai, when Mateana seized Roṅgana and carried him away through the air. "Where are you going ? That man is mine," said Ngāngai ; "put him down." A rock arose in the sea, and Roṅgana stood on it. "Oh, oh !" halloed Roṅgana, "come and fetch me : I am dead." Nguruṅguru launched his canoe and fetched Roṅgana off.

Kolondavi.

Kolondavi is known in Simbo. He comes from Choiseul and is a shark, as Aṅgo's drawing shows ; unfortunately we do not possess the legends there depicted. Kokoro, an important chief of Simbo, was a relative of Kolondavi's and went over to Choiseul to bring him over ; Kolondavi settled in Nambavuru and taught the people how to build skull-houses, a custom he had learnt from Sambembaṅara.

Nanya's charm was taken down in the absence of an interpreter, and I made out that he puts a stick of *vogi* and a barringtonia (*putu*) nut to float on the sea, and hangs up *varu*. This causes wind.

Teṅgesama.

Teṅgesama is a "god ghost" (*tomate tamasa*) of Manning Straits (*Vagena*). I cannot give the charm, but only the following prayer : "To (? from) Kia let him come, to lower Vagena, to upper Vagena, to Sila, to Vati, to Rogorogovoro, Matavagi, two old women of Mbikolia, to Na Kilo, to Ritamela, Putuo, Monohera, to Peahi Kapa, Kikopo, Male Ovana Gire Raviravi" (*Pa Kia milani, pa Vagena peka, pa Vagena ulu, pa Sila*, etc.). Some of these places we know to be in Manning Straits or Ysabel, and probably they all are. Nanya may not kill sharks, whales, porpoises (*torutovu*), crocodiles, the coco-nut crab (*tupe*), the clams called *moso* and *eau*, a crab called *kelagege*, and two fishes with poisonous stings, the *noru* and the *kelagege*. The *kapege* is sacred to Kolondavi ; the others to some god.

The Parrot of Gage.

Gage is a high island near Manning Straits. A monstrous kind of conger used to live there, of the kind called *suata*. We saw a specimen about 3½ feet long, with

brown skin black-spotted ; the head was small with one single aperture for gills ; it had teeth and a long soft dorsal fin ; it is edible, but there is a black variety which is not. The one in Gage was a god (*tamasa*), and devoured men and canoes. When a canoe approached, a certain parrot used to cry "*Kilo*," then the *suata* came out and ate them. Here is Kundakolo's version :—

The men of Ulusage went out to sea ; they arrived in Gage : "*Kilo*," said this parrot ; the conger jumped out and ate the canoe, ate them all up. "Alas ! we are stricken, our men are perishing. Go, then, Sagulele, to sea," said Kolombisu and Njarara. "All right," said Sagulele, and went to Ysabel. "Come, Ngaluvulu, and kill the conger ; the canoes are perishing, the men are perishing." "All right," said Ngaluvulu, and he went and arrived in Gage. "Come, go and get the Two Lañono," said they. Sagulele departed, he went down to Veala : "The canoes are perishing, the men are perishing ; come then you Two Lañono and kill the *suata*." "Good," said the Two Lañono, "let us go." So they came to Gage, and now they were three. "If I cry *kilo*, come out and bite him," said the parrot. They came out and bit the conger that it died. They bit it into small pieces, and put the fragments on the land, where they were changed into stone ; there are a lot of stones in Gage ; these are the fragments of the *suata*. Ngaluvulu changed into stone, and the stone is now in Gage. The Two Lañono went back to Veala. (XLVI.)

The name of the Karu Lañono means literally the two logs on which the canoe rests ; they are sacred (*tambu*) sharks in Veala ; they go before the canoes of the Roviana and Ngerassi people on their way to Vagena, and fight other kinds of sharks.

Kundakolo's drawing of the legend (Pl. XVIII, Fig. 2) excited great indignation among the people of Roviana ; they were unanimous that he was wrong (*koha*) : Ngaluvulu should be on the other side of the picture, nor should he take any part in the carnage, for he arrived too late ; finally the two fishes called *makoto* are missing who decoyed the conger out of its hole. Nguambule at my request drew what he considered to be the truth.

The death of the parrot was told by N'anya :—

The parrot (*na kilo*) kept watch on a mountain. "How shall we kill him ?" they said ; "it kills many a man." The god of Mbatoño (*te Mbatoño*) first made rain and wind in plenty ; they jumped up to catch the parrot, but could not. "Come, you, raise a big wind and sea with rain ; I am not powerful, your turn now," said the god of Mbatoño to Kolondavi. So Kolondavi made wind and rain ; the sea came up the beach ; that shark said : "I'll kill him." He jumped up and fetched down the parrot and drowned it. "I can do as much," said the god of Mbatoño, and completely submerged one place. Now men live, since the parrot is dead ; formerly they could not go near the place.

Our orthography of Sagulele varies : we spell it Saulele, or Savulele also ; Sagulele is the most probable. The following legend concerning the Big Shark of Ganoŋga (*mbagea lavata*) may relate to Sagulele :—

They went and caught fish in a net ; they caught some but refused to give any to two children, who went and told the old woman at home : “ They have caught fish in the net, but will not give us any,” they said. “ I pity you,” said she, “ the sun was hot, you were hungry, but they would give you nothing ; do not go with them to-morrow.” They stayed at home while the rest went out fishing. They threw the net into the sea ; the fish and turtle entered the net. A big shark god (*tamasa*) ate up all the men with their arm-rings, clubs and shields ; so they all died.

Kusi of Ganoŋga, for a fee of one orange-stained ring, told Kundakolo the legend together with the taboo on trees (*kenjo*). This is the taboo that is called *kenjo tamasa*, or god’s taboo, in Ganoŋga ; it is identical with the shark taboo. Kundakolo may not kill the shark nor the centipede ; the one bites in the sea, the other on land.

Kundakolo also knows the *Loga Tambuna*, or rather charm of the God of Loga Tambuna (*Tamasa pa Loga Tambuna*) ; it causes the north-east wind. We have a drawing of the shrine in Loga Tambuna. The man facing us is making a storm (*vagi ranimboŋi*) ; on his left is one holding a small ring (*ovala*) and *paŋgosia* ; these are two images actually on the altar ; to the right stands the *paŋgosia vambule* (wind stilling talisman), and on the ledge we see *mbelama meka* or a single frigate-bird, also called *mbelama ranimboŋi*, frigate-bird of storms, because it flies about when a storm is impending. The zigzag lines represent one or more stumps (*kokombu*) that drift on the sea and on which the frigate-birds rest. In Loga Tambuna lies a big trunk of the ŋgema tree. The frigate-bird is represented on the shrine by a long stone (*ŋgele kakasa*).

Nagua.

Sulutava knows a wind charm with its legend : Peata, his “ Father,” revealed it to him. The following is a translation of a mixture of the narrator’s vernacular and the interpreter’s pidjin :—

The men of Zhava made canoes ; four hundred went on board ; they beached their canoes and went up to the fort (*mbara*) ; they went and killed one hundred ; thirty were killed by the defenders of the fort. They went down to the beach and returned to Zhava. “ Did you find them, my sons ? ” said Nagua. “ How many times did I not tell you not to make a canoe ? Now you have killed men you will die.” “ Let us dig up food,” said they, “ and make puddings for the war feast (*tundu*).” They made puddings one day, next day they held the war feast (*tundu*). “ Come, let us cut off your hair, mother, let us hold the feast together,” said the men of Zhava to Nagua. They cut off her hair. “ If you take off my hair you will see me no more, you will lose your mother,” said Nagua. But they cut off her hair, whereupon she sank into the ground and disappeared. As she went down she

threw a root of *kuruvette* behind her; she threw *año* and a weather charm, and *pasapasa*. She went down till she reached the bottom; then she went through the sea and saw Leazha: "Heigh! you'll be my wife." So she married Leazha. The children of Nagua went for a swim close into the shore: a whale came along towards the beach with Nagua behind: her children knew her: "Our mother, why did you not come? We sorrow for you." "I told you," said Nagua, "if you cut off my hair you shall see me no more; now I am married to a whale and shall return no more." When she began to speak she was still human; as she went on she assumed the tail of a shark. "Do not cry, my sons; I am a goddess now; go home," said Nagua, "I am married to a god." They sat down: "We see our mother: how can we get her back? She is married to a god, and is now a shark," said the four children as they sat upon the beach. Then they flew up to the sky; they had changed into birds, one man and three women.

Sulutava cannot make wind or rain; he only knows how to make them cease (*vambule*); he makes a pudding of coco-nut oil and taro and offers it up in a fire of driftwood (*kokombu*), saying, "This is your porridge, the gods, Nagua, Leazha, Patareke, Pirumbañara, Njinjo, Kololuka, Kulikanna, Takula, i Kindu, i Mbera, i Peata (*Pina na polo tamugau na tamasa*, etc.)." Except Nagua and Leazha they are all spirits (*tomate*) of Vellalavella. Patareka is known in Munda, and his story has been illustrated by Añgo.

If caught in a storm at sea, Sulutava spits *pasapasa* on the sea and says: "Clear up, clear up in Ovaka, clear up in Keleve, clear up in Veala, clear up, clear up in Mburavusu, clear up, clear up in Koluka, clear up, clear up in Matovagi." Ovaka and Keleve are in Choiseul, Matovagi lies in Ysabel. Sulutava may not kill the whale because it is Leazha, nor the shark because it is Nagua. Should he kill a shark, other sharks would sink his canoe.

Kumbokota Gods.

Takele of Kumbokota warned Kapu not to kill pigeons because of Nyatulokete; Sogara told him not to kill bats because of Nyatuloñgi; both are weather gods (*tamasa vambule*) of Kumbokota.

It was a very common practice for anyone when rain came on to call out "*Mbule, Mbule*," without mentioning any names of gods.

Crocodiles.

To every direct inquiry in Eddystone and Roviana it was answered that the crocodile is not a god but a spirit (*tomate*). Nevertheless it constantly appears in prayers to gods, and is sacred to the god of Nyatuloki.

Ghosts and Weather.

A spirit or ghost (*tomate*) can also cause bad weather. We have seen that Njoka and others refused to take part in the rebuilding of the skull-house in Añgi.

Shortly afterwards they went to Vellalavella to buy a slave, but foul weather prevented their return. Njiruviri in Eddystone went out in a canoe to consult spirits, and I went with him. Njiruviri said: "Come down, you spirits and sway the canoe, and be propitious." No response. "You will not?" Still no answer. "You refuse to come down?" He then gave it up. Later Rembo consulted them with an arm-ring; the spirits told him they were angry with Njoka because of Aigi, and he might as well stop away altogether. They forgave him, however, for Sogaviri's sake, who had taken part in the rebuilding and was with Njoka.

Foreign Gods.

Information was obtained in Eddystone about some gods belonging to other islands.

Higalonji was the god of Nduke, who knocked off the top of Patukio. Here is a translation of a fragment about him:—

He is a god in Nduke, a great god. He made the mountain in Nduke; he was a god in Nduke and lived on a big rock. He made the big lake like Pa Na Pugele. He made fishes, sharks; there are crocodiles in the lake; he made the big mountain in Nduke. He went to Manning Straits; in Patauloko he made . . . then he went to Ysabel; in Ysabel he remained with his wife and son; then he sent back the child to Nduke; there the child lived in Nduke, the father in Ysabel.

A sacred ring (*poata*) was brought for sale. It was made by a marine god (*tamasa pa n'ivere*). After some reflection the name was given as Heleveni: but they seemed so uncertain that it was not bought.

The *mbetambeta* grass, says Kundakolo, belongs to the god of Kusage (*tamasa pa Kusage*), a snake. His name is Tatambarambara. He and Higalonji had a feud (*kana*). Higalonji went over to Nduke in a canoe and killed ten men. "I have no canoe," said Tatambarambara; "never mind, I shall swim on the sea," and he swam. He came to Nduke, and with his tail killed ten men. "Tatambarambara came to kill ten men here; I don't care, I'll go to Kusage," said Higalonji, and went and killed twenty. "Alas! I am undone (*mate*)," said Higalonji, "I shall go to his country." He went and killed forty men. "Alas! I am dead," said Tatambarambara, and killed fifty; he killed the people of Rano to a man. "Very good," said Higalonji, "I shall give money to Kalu Vesu." He went to Tetepare, and gave one small ring, one arm-ring, one *raingo*, one *paingosia*, and one orange-stained ring to Kalu Vesu. "I don't want them," said Kalu Vesu, "give me *mbetambeta*, that I may plant it in my country." So Higalonji took some and presented it to Kalu Vesu, who went over to Kusage. He flew up like a bird; he saw a man and killed him, saw another and speared him; he killed out all the men of Kusage. Tatambarambara came out from his stone and seeing not one remained: "Oh!

there is not one left," he said. "Kalu Vesu has killed them all and gone back to Tetepare." He came out and went to Rano, and killed all the men there with his tail: nought remained but the birds; that is why there are no men now in Rano. Then they made peace by exchanging five orange-stained rings; the feud was settled and they desisted (*mbule na kana peŋgari mbeto ari karu*).

General Remarks.

The knowledge of the gods is very shaky. Their real names seem to be scarcely known, and confusion occurs. Thus Leoki confused the god of Momara with the one whose bones are in Aŋgi, and Kundakolo mixed up the god of Momara and the goddess of Nyatuloki.

To the gods are ascribed certain antiquities such as the *mbariki*, rudely made and cumbrous shell-rings, which are highly valued. They were the money of the gods. Sacred rings or *riko*, though very modern in appearance, are also ascribed sometimes to the gods or to those of old (*ria kami rani*). Wonders are put down to them: thus they suggested there was a god inside our typewriter, and the White Man was compared to a god, because of the wonders he performs.

VII.—NUTTING.

There are two kinds of kanary nuts (*Canarium* sp.), the *vino* and the *nari*. As we could only distinguish them by the size, we shall term them small and large kanary nuts.

The tree is a very lofty one; a grove of them is called *aoro*, which also means year. The husk of the nut is dark purple, and has a flavour which recalls a carrot. The shell has three edges, like a Brazil nut, and is very hard. The kernel is very oily, and easily slips out of its skin when picked. When the husk is green and the kernel unripe, it is called *mbulokana*; when it is fit to eat but the internal skin is still white and the husk green, it is *paŋga*; when fully matured it is *kuku*.

The "black kanarium" (*nari ndavala*) has a black skin round the kernel. The "cracked (?) kanarium" (*nari kake*) has a shell ready cracked; this appears to be a peculiarity of certain trees. The hermaphrodite (*rambeke*) is intermediate between the *nari* and the *vino*.

Eddystone, especially Narovo, is rich in nuts, and exports them.

Climbing Charms.

There are plenty of expert climbers in Eddystone, whereas in Roviana only one man here and there has any skill. Charms are used to protect against falls; they are called *mamarana*, that is "light." Of the four whom we know to have possessed such charms, three were women.

Ñeta, Sogaviri's wife, collects the *kilakila* creeper and next day makes string (*gwaro*) out of it ; she places this on a mat, folds over one side of the mat, then the other. The following day she takes out the string after saying : " The *mamarana* (four times), be propitious, you the *mamarana*, be propitious, you Ñau who knew the *mamarana*, Tago, be propitious, Pondo *mamarana*, thou Kila. Nanulu, who knew the *mamarana*, Narega, who knew the *mamarana*, Noe, Ndcseña, Mbaki, Kaene, Valeke, they who knew the *mamarana*." (XLVIIA.) Another version runs : " *Mamarana* (four times), be propitious, be propitious you spirits of the *mamarana*, strengthen the branch and be propitious when these men climb ; let his hand clutch it, let his nails clutch it, let his leg clutch it, be propitious, *mamarana*, I say." (XLVIIIB.) The men then tie it over one shoulder and under the other arm ; if there is enough string they put it on crosswise. She hangs several leaves of *oŋgoŋgu* on the neck, also *pepeu*, one pair (*mbatu*) of *piku* leaves ; one of *pusi*, two leaves of *malanjiri* are tied on the hand. There is no stroking (*ŋgula*) " because it is not a cure (*salaña*). " If a man in spite of the charm falls, he is not killed. If anyone is killed by a fall, Ñeta is the first to go up to the body. She makes a noise (*toka*) as in driving away pigs, and throws stones into the bush all round ; the rope with which the man climbed remains hanging down from the tree ; she puts her foot (*lalagia*) upon the dead body, holding *año* (turmeric ?) in her hand and abuses him : " Dung ! Confining house ! After birth ! " (*Na tea, savo, na ŋgaŋge*.) She then pulls down the man's rope and cools it with two leaves of *pepeu* in each hand, and spitting *año* upon it says : " Depart for ever, thou ghost, do not come back to this country, thou ghost here, and do not . . . do not think of this country ; this is your going and do not come back, go down to Ganoŋga." (XLVIII.) The men then carry off the rope. Ñeta also spits (*kusuruma*) on the body and all round it ; the corpse is then removed with shouting and throwing of stones. Ñeta heads a troop armed with stems of *piro* with which they threaten as with a spear ; the body is cast into the sea, followed by a shower of stones, sticks and leaves. The man need not be killed on the spot to be thus ill used, for one who fell down in Pepere and died before reaching Olepeninga was cast into the sea.

Ñeta can also cure a man whose fall was not fatal ; she strokes (*ŋgula*) with the leaf and tuber of *año*, saying : " Be propitious, thou spirit of the *mamarana* and cause this man to live ; let him not die." (XLIX.) She hangs *pepeu*, *piku*, *pusi* and *oŋgoŋgu* on the neck and *malanjiri* on the hand ; *año* and *pasapasa* are spat (*kusurunia*) ; the string of *kilakila* is put on as a shoulder-belt with the same prayer as when preparing men for the ascent. The cure lasts four days. There is no food taboo. The cure came to Ñeta through her " father," Ñanulu.

Misi's *mamarana* was brought from Kiamba near Kokohalle in Roviana by a *siri*, a red bird that eats coco-nut. Misi learned it from his mother for a fee of one shell-ring. He makes string (*gwaro*) of *pilisiu* skinned and dried in the sun ; he

passes the strings through an arm-ring, ties them round it, and puts the whole into a mat; next morning he puts on each man two, first on the right, then on the left, saying (*pitoa*): "Here is the string, you *mamarana*, let us climb, be wondered at,¹ hang on, stand on, and be propitious; if I fall, let me not die." (L.) The leaf called *elelo matena* in indeterminate quantity is eaten with betel mixture. If a man falls and dies, Misi's mother goes first to put her foot on the body, and is followed by other women; it is forbidden to men; they may not even look on while the women convey the body to the sea with abusive language. If the man is not killed, Misi puts string (*gwaro*) upon him and hangs *pepeu* on his neck. He made a statement to be received with caution, that he could not cure a man who had not put on *mamarana* before going up.

The New Year.

Before the small kanary is quite ripe they hold the *titikele*. We were told that it occurred before our arrival. It occurs ten days before the festival of *vahimbi*, so that either the latter festival must have been going on for some time before we became aware of it, or the *titikele* really took place during our sojourn unknown to us. Our information is slight, but may be quite complete notwithstanding. Two sprays of small kanary leaves (*kele*) are tied on the skull-house on each side, and puddings are made with last year's large kanary nuts. As a specimen of prayer we were given the words: "Eat the new crop, I hang up the bunches for you, the ghosts." (LI.) The same procedure is followed, they say, as at the offering of first-fruits (*vahimbi*). If no priest (*iama*) be present, they hang the bunches on the *vonjamboe* tree. The ceremony is held first at the skull-house in Aŋgi.

Harvest.

The tree, as was mentioned, is ascended by means of ropes; the *vino* has strong branches which, if tied together, will bear the man's weight as he goes about picking the nuts. In Ove, Pinju climbs first of all, and performs the ceremony of Hiding (*Golomo*) described in the chapter on gods (Pt. II).

In breaking the nut, the custom is to lay it down, and with one blow of a stone to strike off the husk and crack the shell along the edge. According to Keana this method is not enjoined by a taboo, as is the method of breaking the large kanary. As the nut is small and has to be held between the thumb and forefinger, a stone is inconveniently large; a small hammer (*kimo*) is therefore preferred; a bit of kanda creeper is thinned down so as to be very flexible; the end is bent back, a long round stone or a piece of iron is inserted in the loop and bound fast with *puloso* or European stuff; string and the *lave* creeper are also used to wind round the haft. Thus a small hammer with a flexible haft is obtained. A sharp blow with this will husk and crack the nut.

¹ Because not every one can climb.

First-Fruits.

The first-fruits of the small kanary have to be offered to the spirits under pain of their displeasure, which causes sickness; the spirits that cause this disease are called Ave. This ceremony is called *vahimbi*, a foreign name to judge from the *h*. It also seems to be called *aoro garamba*, that is the "New Year," or "New Crop." The festival opens at the skull-house in Añgi; then comes Pa Soi, then Pa vino; all three are "place belong *tamasa* (god)," and the god prescribed the order; the other skull-houses follow indiscriminately. We witnessed the whole ritual at Mbakia on June 16th, and comments upon it were afterwards obtained. The party, including Nareti as priest (Pt. I, p. 105), proceeded up into the bush; they carried a big cylindrical mortar (*kokale*) and pestle (*tutu*). On arriving at the site, Nareti began to cut down the ferns with an iron knife, and pull down the high *sinu* stems that enclosed the skull-house with its growth. This skull-house was of the usual type with galvanized-iron roof, three *mbariki*, one shell-ring and one *raigo*. The leaves hung up at the *titikele* were still there; a platform, tabooed to laymen, extended before the house. It belonged to Njiruviri, Nareti and others, who were all present but two. One boy not connected with the skull-house attended by invitation, and one man because of his wife. After he had finished his work, Nareti came and sat in the part that is not sacred (*tambu*). A fire was lit with matches and sweet yams and bananas laid upon it in their natural state; a basket full of small kanary nuts ready shelled and cooked was opened; these nuts were said to come from a sacred (*tambu*) tree in Pea reserve exclusively for the festival of first-fruits (*vahimbi*). Some of it was placed on the sacred platform, whence Nareti took it and emptied it in a clam-shell (*moso*) in which he pounded up the nuts and sweet yams with a stone pounder; the pudding so made he tied up in a *sinu* leaf and placed it on the stone foundations of the skull-house; with an ember from the other fire he kindled a little wood on the stones, tore a strip of the envelope of the pudding, and taking some pudding put it on the fire and spoke some words; he then tied the *sinu* leaf on a *vonjamboe* tree. After fanning the fire into a flame, he withdrew to his former place. In the meantime the sweet yams had been pounded up, and then nuts were added, and the whole pounded up again. Nareti received some of this pudding, and placed part of it on the common fire as an offering (*vamiro*) and ate up the rest. It seemed not unimportant that the pudding laid on the altar should be wholly consumed, since Nareti twice went to fan it again and got some more firewood to activate it. Puddings were then wrapped up in *sinu* leaves heated to make them supple; everybody received one, including Nareti. These puddings, being made at a skull-house, are taboo to women; we all ate some and wrapped up the remainder to carry away. Before going down again, Nareti went up to the house, took off his arm-ring, and held it up and spoke: various questions were suggested by the onlookers, one concerning the "*tini vaka*," or White Men; the ring for a

long time did not move ; at last Nareti's arm began to whirl round, generally going round twice at a time, sometimes only once, at others eleven or twelve times ; the rate varied, once there was a pause during which the hand vibrated, then the whole arm was again whirled round. After some forty-eight answers, as it appeared, we took the way home in an order which bore no relation to that of our going up, and proceeded to discuss the ceremony. As a specimen of the words spoken while putting the pudding into the sacred fire we were given the following : " Here is the pudding for you the ghosts, be propitious, let us not be ill, we men." (LII.) The pudding first given to Nareti is called " first pudding " (*yamu vakenu*). When putting some of it in the fire he says : " Here is the pudding for you the spirits ; eat first ; let us men eat afterwards." (LIII.) If Nareti does not eat all he puts the rest into the fire or gives it to an old man. Mbiu, another priest, says he hangs what he leaves on a tree. The ghosts were slow in answering when questioned, so they were told to be quick as we wanted to go ; it was suggested they might be afraid of the White Men present, but they did not object, and they assured us we should not be ill.

Not all priests (*iama*) can divine (*nanasa*) ; for instance Mbiu ; someone has to do it for him. Curiously enough, Kundaite cannot divine, though he can conjure up ghosts at Londu (Pt. I, p. 94). If there is no priest they put into the cooking fire (*iku paparagu*) a pudding pounded in an ordinary mortar, and a layman ties the *sinu* leaf on the *vonjamboe*. The clam-shell and mortar are kept in the skull-house.

The attendance in Mbakia seems to have been quite a large one—nine men, not counting ourselves. Other skull-houses seem to be disposed of quite perfunctorily. At one of them the attendance consisted of the priest and his daughter only, and he did not know the names of the inmates. A woman could attend here, because there were women's skulls along with the men's ; at Mbakia women might not attend. At another skull-house there were four women and a boy of ten or thereabouts ; he had to make the burnt offering in the common fire. We attended a burnt offering in Pa Na Gundu, where there was no priest, only a man and two boys. The man burned some pudding in the common fire, and tied on the *vonjamboe* tree the pudding intended for the sacrificial fire (*iku vavamiro*) ; there was no " first pudding."

First-fruits are also offered at shrines such as that of the Mad One (*tuturu*) in Tetege.

The rites went on all through July. We believe that in Pa Na Gundu was as late as August. The people do not wait till they are all over before they begin eating nuts.

The following specimen of prayer was given by Mbiu, the priest : " This is the pudding for you ghosts, I eat the new crop ; be propitious, let the branches be strong, let the ropes be strong." (LIV.)

Puddings.

Meanwhile the nuts are being used actively for profane feasts and everyday consumption ; if a man invites others to come and pick his nuts for him he has to pay in the shape of a "*kaikai*." Thus Lembu entertained his friends in Marundu on July 26th ; he cooked bread-fruit and bananas, and, as usual, the guests prepared the food. Owing to numbers, a long trough was used instead of the ordinary mortar. These troughs, also called *kokale*, are like dug-out canoes ; the hollow has vertical sides, square ends, and greater depth than breadth ; the solid wood runs out to a point. The length varies, but we have seen none as large as in Roviana, and none on which any art had been displayed. The pounders, men and children, sat in a row on either side. As pestles they had cut thick branches, and removed the bark at one end. It was jolly work, and variations in rhythm enlivened the proceedings. About half will pound in slow time and the others in double time (*tekuteku*), while one or two strike the sides of the trough in rapid measure and varying rhythm ; sometimes they drop into a slow measure, thumping the bread-fruit, then drawing the pestle towards them so as to strike the rim of the trough ; then getting tired of the sport, they dropped into an irregular go-as-you-please. Bananas were pounded up with the bread-fruit ; this was taken out and spread on a leaf of *poro* ; pounded nut (*mine*) was added and kneaded into it ; the whole was made into the shape of a roly-poly, which was divided into balls for puddings. Puddings thus made are called *rahi*, and are used when the nuts are not abundant, in order that they may not run out too soon. Otherwise the nuts are pounded into the dough. When the feast is over the trough is overturned, the pounder is stuck between the wall plate and the thatch. The small mortars are stuck on the pestles. Before use a mortar is held over the fire to smoke out the insects.

Besides bananas, sweet yams, and bread-fruit, taro and horse taro are used. Taro seems to be the most prized.

The pudding is laid on a leaf of *sinu*, which is folded and tied round with the partly detached rib.

Yamu is the generic term for pudding, but it also refers more particularly to pounded puddings as opposed to grated ones. *Ivo* is made of bananas scraped raw out of their skins and pounded up with nuts, then cooked. *Ragese* is the most esteemed kind ; it is made with taro, or failing that, with horse taro (*via*). The taro is grated on corrugated iron pierced with holes ; formerly they used a grater made of branches of thorn (*kanda*) tied parallel to one another. The grated stuff is then pounded up with nuts, and taken out of the trough with a paddle. The puddings are then cooked in hot stones. The oven is not sunk in the ground, but the hot stones are contained between four logs, leaves are laid on them, and pierced ; the puddings are heaped on these leaves, and the whole is again covered with leaves with a few hot stones on the top. Such puddings are less gluey than the pounded ones. Huge grated puddings, called *patu n'yamu*, are made for the *vavolo* festival.

Nuts are also eaten plain, raw or roasted ; they can be mixed with edible leaves, such as *ande* and *neka*.

Smoked Nuts.

Nuts are smoked for keeping. They are then made into packages. The *ndena* is a square parcel wrapped in *sinu* leaves and tied with *kanda* ; it looks like a small pillow. The *mbomboro* is much larger and more elaborate ; it is in shape like a large thick sausage, several feet long. Some are made "as thick as a schooner's mast." The nuts are pounded and pressed together, and wrapped in leaves of *kitikato*, and wound round with a strip of bark. The whole is enclosed in leaves of *sinu* ; *njinono* creeper is tied lengthwise very close together ; the strings, as it were, are kept from slipping by *njinono* tied round the *mbomboro* at intervals, forming a loop round every string, a method called *natinatina* ; or else the *njinono* may be wound spirally round. The ends of four strips of *yako* forming a cross are enclosed in one end of the *mbomboro* ; the *yako* is plaited to form a cord to suspend the whole. *Mbomboro* are rare in Eddystone, and the technique appears to belong to Vella'avella, two dummies were made for us by a man of Vellalavella. *Pinupinusu* appears to be another term for the same packing. These packages are kept over the smoke.

Large Kanary Nuts.

The large kanary nuts begin about August.

The branches of the tree that bears the large kanary are too weak to bear a man's weight ; they cannot therefore be picked like the small kanary nuts, but must be pulled off with a pole at the end of which a hook is tied to form a hook.

The nuts, being larger, are cracked with stones ; it is absolutely necessary to stand it up in striking off the husk, then lay it down. To proceed as is done with the small kanary would make the tree barren : this is the subject of a *tambu*. The same method is practised in Roviana, but enforced by convenience and not by a taboo ; the reason there given is that the husk of the large kanary nut is too thick to be struck off with the same blow as cracks the shell.

Smoking.

It is not usual to make the large kanary nuts into packages, such as the *mbomboro*, though it is done. They are generally preserved in their shells, probably because they are not husked and cracked with one and the same blow like the small variety. The unshelled nuts are heaped upon the shelf (*njanjaraka*) over the smoke ; for trade they are plaited round with coco-nut leaf into a bell-shaped package ; the plaiting ends at the top in two tails by which they are hung. Nuts often go bad in the shell, and are then called *nyete* ; they are not wasted, for during the slow proceedings of a sacrifice, some will spit them on the rib of a coco-nut leaf and roast them, thus making them palatable.

Smoked Nut Festival.

Nuts smoked in the shell are called *nduki*; the fruits, the "new smoked nuts," as they are called (*nduki garamba*) must be offered to the spirits; though fresh nuts are eaten freely, the baskets of preserved nuts may not be consumed till the burnt offerings have been held. I witnessed this ceremony as performed on November 20th in Añgi, which here, as at the New Year, opens the series of sacrifices. The party present consisted of fourteen men and boys, including Rembo, the chief, Pandañgeto, the priest of the gods, and Soge, the mortuary priest. Soge cleared away the growth all round; then pounded up some nuts in a small mortar taken from inside the skull-house; he added no taro or anything. He emptied the mortar on four leaves of *ugugu*, and then put the nuts bit by bit into the fire; while he did so, Pandañgeto spoke the following prayer, each clause of which corresponds to four portions of nuts as put into the fire. The prayer runs: "Yours the thousand earthquakes, yours the thousand droughts. Yours the priests. Yours the Scolding Stump. Yours the priests. Yours the Stranded Stump. Yours the priests." And so he goes on, mentioning various shrines of gods, followed by their priests. Then he proceeds: "Yours Vama Ite. Yours Vama Lavata. Yours the whale. Yours the *virongu*, Yours the crocodile. Yours the shark. Yours the king fish. Yours the wasp. Yours the *kelagege*. . . . Yours the centipede. Yours the red ant. Yours the black ant. Yours the *ndui*, the *menemene*." (LV.) No one would have guessed that Panda was praying: he was squatting on the ledge above the skull-house, and seemed to be looking vacantly, while the others went on with their work. The earthquake probably refers to the god of Momara, and I conjecture the drought to refer to the goddess of Nyatuliki. The *vasi iama* or *vasiama* are the deceased priests. Njura pounded up two puddings and gave one to Njukili, who ate first because he used to be priest in Añgi; the other he gave to Soge, who ate next. Pandañgeto took the folioles of a coco-nut leaf, and detached the blade from the rib on either side part of the way down; on each rib he spitted two sets of four nut kernels; he tied the free ends of the blades on a *vonjamboe* tree about ten yards from the skull-house. This is called *susuni*, and is done at all the skull-houses, but not exactly in the same way. After this, puddings were eaten as usual. The offering of plain nuts, without taro or sweet yams, is peculiar to Añgi.

In Ogogo there are coco-nut trees specially reserved for hanging up kernels (*susuni*); these palms are taboo to women and small boys. In Patumini we found the coco-nut rib bent in two and placed astraddle on a branch with kernels spitted on each end. Mbiu strings four kernels at each end of eight ribs, and hangs them up, four on either side of the skull-house; this *suni*, as it is called, belongs to the ghosts (*tomate*). Then he makes a pudding of smoked nuts and sweet yams, saying: "This is the pudding for you, the ghosts, ward off sickness, disease; let us be whole; be propitious, you ghosts." (LVI.) If no priest is present, a layman hangs the nuts on the *vonjamboe*.

In Pa Soi, Misi puts four puddings in the common fire. In Pa Vino, Soge offers up four puddings. There is no formal prayer of the *varavara* type at either of these places.

The smoked nuts were offered up in Titiro, Karivara, on the same day as at Pa Soi. The prayer has been given in the chapter on gods.

On November 26th the festival was held in Kuve, near Koluka. The skull-house was of corrugated iron and small, but judging from the numbers and personages present, not unimportant. Puddings were made with taro. Unfortunately, the burnt offering took place while we were looking round the place; but they said pudding and bonito were offered up, for ten bonitos had been caught; after that every one ate bonito and pudding. Kainyira, the priest, and Mboka both failed to get an answer in divining with the shell ring, but Ronda succeeded, and replaced the shell ring on the branch. On the way down Kainyira parted from us, taking just enough pudding to offer up at another shrine. He went alone.

Export.

Nuts being abundant in Eddystone are exported: a *mbomboro* some 3 feet high and 4 inches thick is worth a shield. The export is to Luŋga, Ganoŋga, and Roviana.

The Stolen Mbomboro.

By Leoki.

The people were in a certain place gathering nuts and making *mbomboro*. Two men went out to Rombu; all the people were away at noon; they went in, saw a *mbomboro* and stole it. Another day they all went gathering nuts again and left them in the house; there was no one in the house; the two men went again to steal. "This is the second time we have put nuts into the house; we have not seen the thieves. Put me in a big *mbomboro* and hang it up in the house, so that I may keep watch," said Tuŋutuŋuponda. They put him inside a *mbomboro*, and hung him up underneath the house. "You go to the place you want to go to work in; I shall remain in the house and keep watch for the two who steal our nuts." "Let us go," said the two men, "everybody is away; let us go and steal." "Now you stay here, I shall follow the path to look at the house. If no man is there, we will go; if there are people, let us not go into the house." He stood near the house and saw no one; he looked all round. He went back to fetch the one who was keeping watch on the path; they came to the house. "There is nobody in the house; take a stick and let us carry this *mbomboro* here." They carried it and set out: it was Tuŋutuŋuponda who had been put inside the *mbomboro*. One man went before and one behind, carrying it along the path. The man who was behind saw Tuŋutuŋuponda's leg, which had broken through the *mbomboro*. "I want to relieve



FIG. 1.—SHRINE OF NJIRIPELE.



FIG. 2.—SHRINE OF ĪNGEMBAÑARA ON MATENDIÑI.

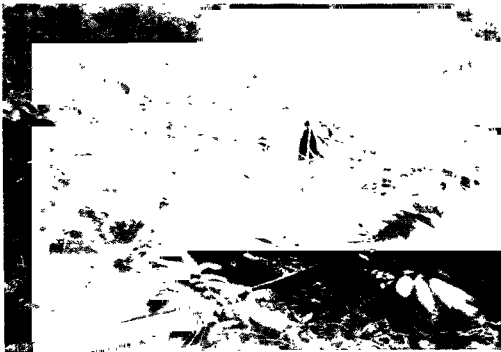


FIG. 3.—SHRINE OF A GOD.



FIG. 4.—SHRINE OF MATEANA.

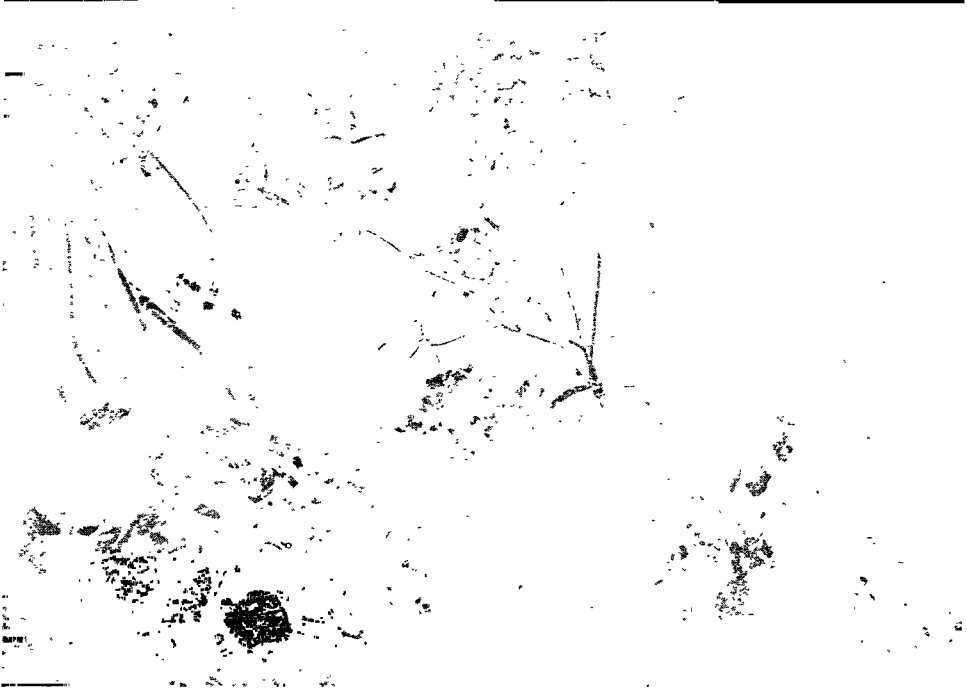


FIG. 1.—SHRINE OF THE GOD AT MARONDU.

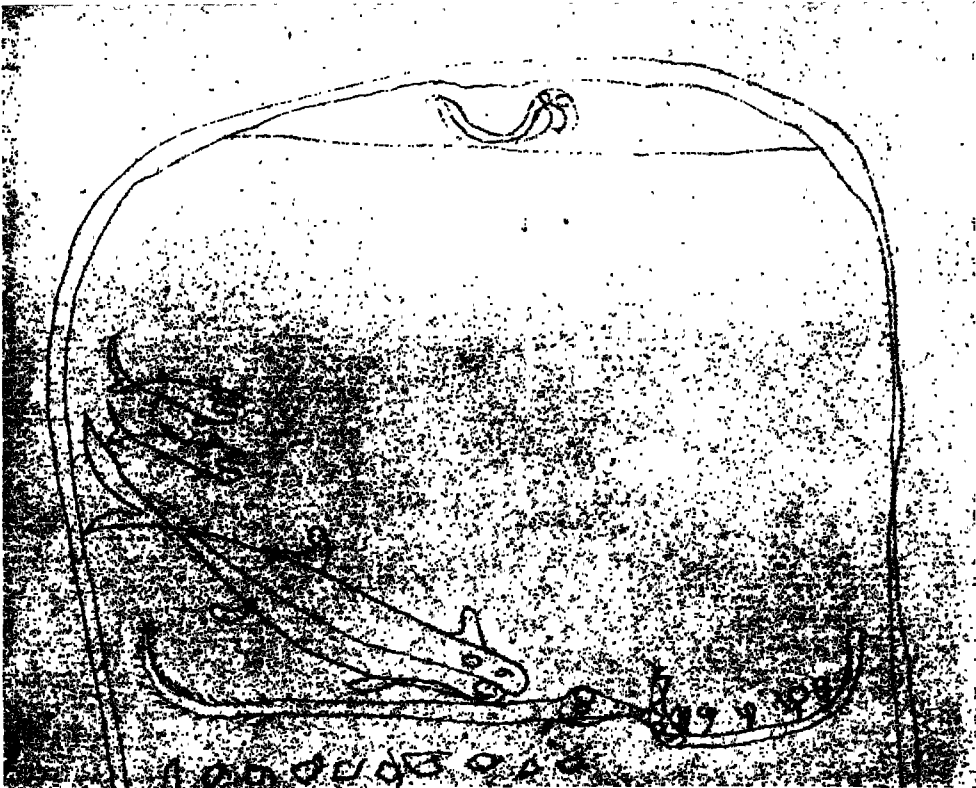


FIG. 2.—THE LEGEND OF THE PARROT IN GAGE, DRAWN BY KUNDAKOLO.

THE CULT OF THE DEAD IN EDDYSTONE OF THE SOLOMONS.

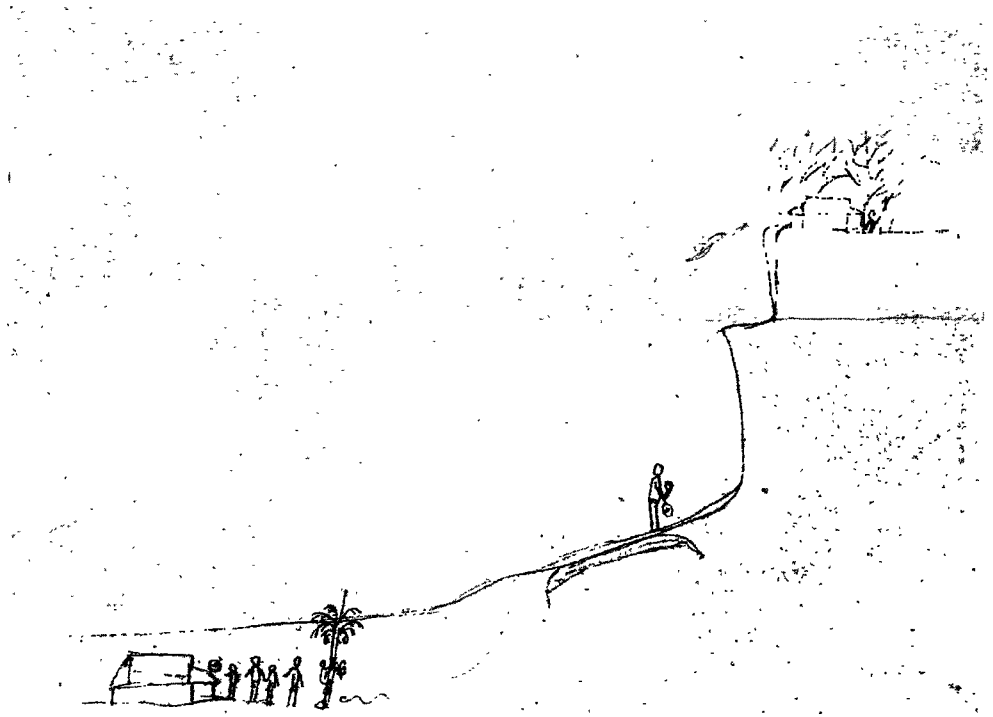


FIG. 1.—THE LEGEND OF MAGOANA, DRAWN BY ANGO.

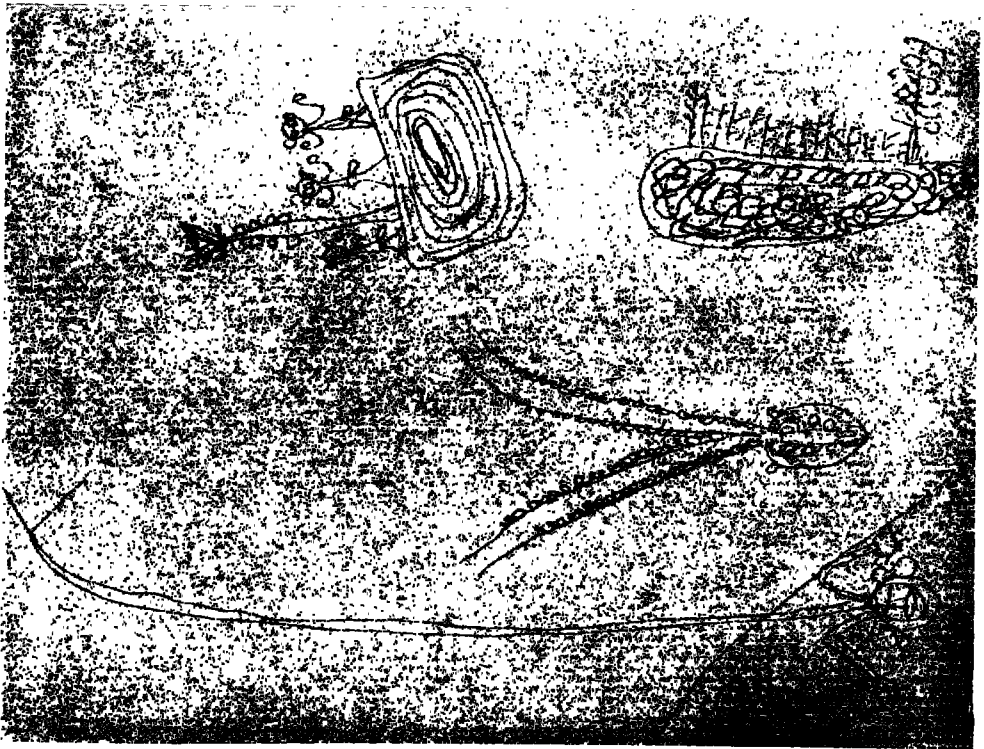


FIG. 2.—KITA SHRINE AND THE LEGEND OF NGAŊAE AND THE FLYING CHIEF, DRAWN BY KUNDAKOLO.

myself, and we need a rest too," said he. So he put down the *mbomboro* and had a rest. The man who went to relieve himself ran away. The other who remained waited and waited and waited; no one came back. Tuñutuñuponda broke the *mbomboro* and hit the man who was waiting, then went in quest of the other, went, went, went, and found him at his house; he killed him also.

This is a true story. Tuñutuñuponda lived in Pandaka in the bush behind Masuru.

ERRATA IN PART I.

Page 102, line 18—For "now" read "not."

„ 104, „ 19—For "*mbinanara*" read "*mbinanara*."

THE FESTIVAL OF SAN ZOPITO AND THE OX AT LORETO APRUTINO.

By J. A. SPRANGER, Florence.

[WITH PLATES XX AND XXI.]

I.—FERTILITY FESTIVALS IN THE ABRUZZI.

LORETO APRUTINO is a large village of the Abruzzi, situated on the top of a hill amid undulating fields, about twenty miles from the Adriatic coast, and over seventy miles from its more famous namesake near Ancona (Pl. XX, Fig. 1). Several industries flourish in the more or less immediate neighbourhood,¹ but Loreto itself, famous for its olive oil, is, as it always has been in the past, an almost exclusively agricultural community.

We cannot, therefore, be surprised to find in this place a yearly ceremony of a decidedly naturistic character, in close connection with the chief means of livelihood of the population.

The existence of such a festival here appears all the more natural when we consider that other ceremonies of a similar nature are by no means wanting in the Abruzzi. Thus the Feast of Serpents, celebrated at Cocullo on the first Thursday in May, in honour of St. Dominic, plainly recalls the primitive fertility-spirit, the Agathos Daimon represented by the snake on many ancient Greek coins and reliefs,² and especially the well-known relief of the Eumenides of Argos.³

At this festival of St. Dominic a procession takes place, in which an image of the saint is carried, "literally covered with live snakes which the peasants of the place compete in catching to adorn the statue and to carry in their hands in the procession."⁴

The fact that this ceremony is supposed to render those that participate in it immune from snake-bite⁵ offers, it is true, an analogy with the Yokut rattle-snake dance in California,⁶ but the time of year at which the Feast is held would appear to indicate that, even if the serpents are not actually to be "regarded as embodiments

¹ Macaroni and cloth are manufactured at Collecervino, porcelain ware at Città S. Angelo, etc. See Enrico Abbate, *Guida dell'Abruzzo* (Roma, 1903).

² J. E. Harrison, *Themis*, pp. 277 sq.

³ Reproduced in J. E. Harrison's *Themis*, p. 281.

⁴ Enrico Abbate, *Guida dell'Abruzzo* (Roma, 1903), part II, p. 194.

⁵ Abbate, *loc. cit.*

⁶ S. Powers, *Tribes of California* (Washington, 1877), pp. 380 sq., quoted by Frazer, *The Magic Art*, I, p. 358.

of the tree-spirit or corn-spirit,"¹ they nevertheless partake more of the nature of Agathoi Daimones than of mere emblems of a form of contact magic. This supposition gains in strength when we consider that St. Dominic of Cocullo does not merely defend man from snake-bites; he also protects the crops from caterpillars.²

Fertility festivals of a more obvious type and more evident origin are those held at Bugnara and Bisenti. At the former village "over a hundred pack animals—horses, asses and mules—laden with corn, go in procession to Our Lady of the Snow; the faithful ride on the packs, with wreaths of corn-ears on their heads and necklaces of macaroni, and lay these gifts at the feet of the image."³

From an inscription found at Bugnara it would appear that there was once a temple of Ceres there,⁴ and this is all the more probable, since the Church of Sancta Maria ad Nives at Pianella, also in the Abruzzi, is known to have been a temple of Ceres in ancient times.⁵

These facts point to a case of survival of a feast of Demeter, now transformed into Our Lady of the Snows.

"At Bisenti, numerous young girls, with baskets of corn on their heads, lead through the streets a donkey bearing on its back a larger basket; and they enter the Church of Our Lady of the Angels to make their offering, singing."³

"Bisenti is said to have been an emanation of Greek colonies established on the coast of the Adriatic."⁶

The analogy of these with countless fertility ceremonies from pre-historic times to our own day in other parts of the world is obvious.

The Festival of "San Zopito" at Loreto Aprutino presents, however, certain special characteristics that induced me to be a spectator thereof this year in order to study it at close quarters.

II.—THE OFFICIAL ACCOUNT OF THE ORIGIN OF THE FESTIVAL.

Before proceeding to the description of the ceremony as I saw it, and with the enquiry into the probable first origins of the various parts thereof, it may be advisable to give the official account of the origin of the festival, as furnished to me by the courtesy of the Most Reverend Abbot of Loreto Aprutino, the learned Don Luigi di Vestea, on the basis of ecclesiastical documents. According to the version accepted and published abroad by the Church the story runs as follows:—

The revival of piety that took place throughout Italy at the beginning of the eighteenth century was very keenly felt in Loreto Aprutino. It caused the people

¹ J. G. Frazer, *Balder the Beautiful*, II, 43.

² Gabriele D'Annunzio, *Novelle della Pescara*, "La vergine Anna."

³ D'Annunzio, *op. cit.*

⁴ De Nino, quoted by Abbate, *op. cit.*, part II, p. 192.

⁵ Abbate, *op. cit.*, part II, p. 465.

⁶ Abbate, *op. cit.*, part II, p. 451.

to realize that, although they already possessed two patron saints in St. Thomas Aquinas and St. Michael, yet their town did not hold within its walls the body and blood of any one saint whom they might call entirely and exclusively their own. The town Corporation or Università Comunale accordingly requested the Bishop of Penne to intercede on their behalf with the Holy See in order to obtain the fulfilment of their wish.

Pope Clement XI not only agreed to let the Loretani have a saint of their own, but invited a canon of the Chapter of Penne to come to Rome and choose for himself the relics of a saint and martyr from the Catacombs of St. Callixtus. Canon di Matteo was entrusted with this important mission, and accordingly on October 12th, 1710, he chose the relics contained in a tomb over which the name alone of the Saint—Zopitus—could be deciphered.

Any details as to the Saint's life and origin that may have been depicted, as on the ceiling of his chapel in the Abbey Church at Loreto,¹ or related, as in current versions of the legend,² are therefore now officially admitted to be apocryphal.

The relics, consisting of the bones and a phial of blood of the Saint, were placed in a wooden chest and transported from Rome to Penne, whence, on the Monday after Pentecost of 1711, they were carried in procession—"honorifice translata," as the entry in the Martyrologium has it—from Penne to Loreto Aprutino (a distance of about five miles), and their final reception in the Abbey Church of Saint Peter was "celebrata ferventi obsequio, mirifico apparatu, fideque permagna."

The chest was placed under the altar of St. Thomas Aquinas, a wooden bust of the Saint was carved, holding in its right hand the palm of martyrdom, and two festivals instituted, one on October 12th, the day on which the relics of the Saint were discovered in the Catacombs of St. Callixtus, and one on Whit-Monday, the day on which they were carried in procession from Penne to Loreto. To commemorate the latter event a procession was included in the festival, in which representative groups of the local artisans were to take part, like the guilds in religious processions in Florence, Siena, and other cities. Since the occupations of the Loretani were, as has been said, almost exclusively agricultural, and the groups consisted of "Potatori" (olive-tree pruners), "Trappettari" (olive-press workers), "Zappatori" (diggers), "Aratori" (ploughmen), and so forth, it was natural that some emblem should be sought for that might in a sense represent them all, in the same way as the enormous wax candles, bearing little wooden images of a plough or other

¹ The fresco in question, dating from the construction of the chapel (1843 *sq.*), represents St. Zopitus before a Roman judge who is trying to make him deny his faith.

² As, for instance, the statement that St. Zopitus was a young man from Asia Minor, quoted by Dr. Acerbo in an article on the subject in *Il Risorgimento d'Abruzzo*, published at Rome, May 23rd, 1920. This statement may, however, have arisen from the neighbourhood of the tomb to others known to have contained the bodies of persons from that part of the world.

agricultural implements, represented the single separate groups.¹ What more fitting than that such an emblem should be found in the person of an ox ?¹ It is admitted that the exact date when an ox first figured in the Feast of St. Zopito is not known, but some time about 1712-15 is suggested. This officially relegates the following account of a miraculous origin of the participation of the ox to the realm of legend. It is stated that while the relics of the Saint were being brought from Penne to Loreto on Whit-Monday, 1711, a peasant was ploughing a field by the roadside with two white oxen yoked to his plough. When the procession passed by he deliberately neglected to salute it, not even uncovering himself, for he was an unbeliever ; but his oxen, recognizing the relics of a holy saint and martyr, knelt on their knees until the procession had passed. The ploughman, seeing this miracle performed before his very eyes, was converted from thenceforth. The legend is, however, still related and believed among the peasantry of Loreto. On November 1st, 1843, the wooden image above referred to was, as usual, exposed for the veneration of the faithful on Whit-Monday, when a strange thing happened : drops as of perspiration were seen to be pouring down the face of the image ! The miracle continued for three days, during which time Monsignor the Bishop of Penne was enabled to come to Loreto and verify and vouch for the occurrence.

In consequence of this miracle a special chapel was constructed for the Saint in the Abbey Church ; a handsome silver urn replaced the wooden chest as a receptacle for the relics, which were now placed in the marble altar of the Saint's own chapel, behind a drop-curtain that is only drawn down on Whit-Sunday morning, and is again raised on the following Tuesday evening. The miraculous wooden image was placed in a niche behind the altar, and another image made, of solid silver, to be carried in procession on the festival of the Saint. The chapel was completed in 1865 by the addition of the antechapel pavement.

Votive offerings were, till a short time ago, hung about the walls of the chapel, but they have become so numerous that they have been removed and stored in an adjacent recess of the church. The most recent of these votive offerings, a gilt frame containing a small silver leg, crutch, etc., is now hanging on one of the columns in the main aisle, together with a letter signed by the donor explaining how his wish had been granted by St. Zopito, and his wounded leg cured so that he could now walk.

III.—THE FESTIVAL OF SAN ZOPITO.

The actual Festival lasts three days ; it begins with the unveiling of the urn on the morning of Whit-Sunday, while the bands of the neighbouring villages

¹ “ After careful study, we may assert that this is solely a form of homage that, from the first years, the ploughmen and the cattle-breeders in general—who even now constitute a large percentage of the population of our Comune—began to render to the patron saint, in a somewhat original form, but one that is perfectly in accord with the meaning and importance of the ox in our rural economy.”—Dr. Acerbo, *op. cit.*

assembled in the porch of the Abbey Church, play the Italian Royal March. This particular piece is performed as being the highest musical honour which it is possible to pay to the celestial patron of the place, though its performance in such a connection is distinctly unusual, and hardly in accordance with the present relations of the Vatican with the Royal House.

On this same morning the ox is led through the streets of the village, while a house-to-house collection takes place. It is also led into the church and made to kneel before the image of the Saint. This part of the proceedings I did not myself witness, as I only arrived in Loreto on the evening of Whit-Sunday itself.

I was informed that the ox is offered spontaneously by one of the peasants of the district, the peasants arranging among themselves who it is to be. The same ox continues in office until for any reason—illness, death, or sale—it ceases to be available; then another ox is offered, it may be by the same peasant or by another. The animal that took part in the 1920 festival was five years old, and had already taken part in two previous Whit-Monday processions. The peasant in this case was one Giuseppe d'Amico, cultivator of a farm a few miles south of Loreto, beyond the Church of Santa Maria in Piano. This family had offered the ox for the last twenty-six years.¹

Once the animal has been chosen, it is relieved from the yoke about two months before the day of the feast, and specially fed and fattened against the occasion. It is also trained to kneel when pushed down by the forelock, and accustomed to the noise of shouting and brass instruments and to the sound of the bagpipes. The use of the latter instrument was once widely spread throughout the Abruzzi, but the last bagpipe player in Loreto was an old man, who died some years ago, and he had learnt to play it on purpose for this special occasion, for a bagpipe player must go immediately before the ox, piping continually during the whole time that the ox is marching slowly along in the procession.

Now the piper is a man from the mountains—the Maiella that raises its snowy summits high into the southern sky—from a solitary village of the highest valleys, where the old custom of playing on the bagpipes has not yet vanished.

The ox is adorned with ribbons, horns and tail are gaily decorated, and a bright red cloth laid over its back. On the ox's back a child rides in the procession—a male child, usually of the age of six or seven, but on the present occasion a mite of three years of age was chosen for this purpose (Pl. XX, Figs. 2 and 3). The child is chosen preferably from the family that offers the ox; in this case there was no difficulty, as D'Amico, besides being himself the father of a numerous progeny, has three brothers, each of whom is married and has a family. The three-year-old child in question was a nephew of his.

¹ This information was supplied to me by Giuseppe d'Amico himself.

For the procession the child is dressed in white, with arms left bare, while two wings and a veil are added to give him the appearance that justifies his name of "L'Angiolétto." The arms are adorned with gold chains and bracelets lent for the occasion by the Baroness Casamarte, wife of the Baron who inherits—in the minds of the people, if not actually according to modern Italian law—the feudal lordship of Loreto.

The child carries a tiny blue parasol over its shoulder (a by no means useless adjunct when one reflects that the poor mite has to sit on the ox's back, firmly held by a stalwart peasant on either side, during the three long hours and more that the procession lasts, nearly always under the full sun of a mid-Italian afternoon), and he also holds a long-stalked scarlet carnation in his mouth during the whole of the proceedings.

The first audible sign of festivity on Whit-Monday morning is the singing of the women as they go to church about 5.30 a.m.¹ This is followed at about 7 a.m. by the noise of the bands of the neighbouring villages as they march up the castle hill and main street (Via del Bajo) to the Abbey Church, playing as they go.

At 9.15 a.m. the festivities proper commence. The letting-off of half-a-dozen loud squibs on the hill-side toward the Capucin Convent warn the awaiting populace of the approach of the "Procession of the Horses." This procession, consisting of the muleteers and carters ("vetturini") of the village, mounted on caparisoned horses and carrying banners, is preceded by a band.

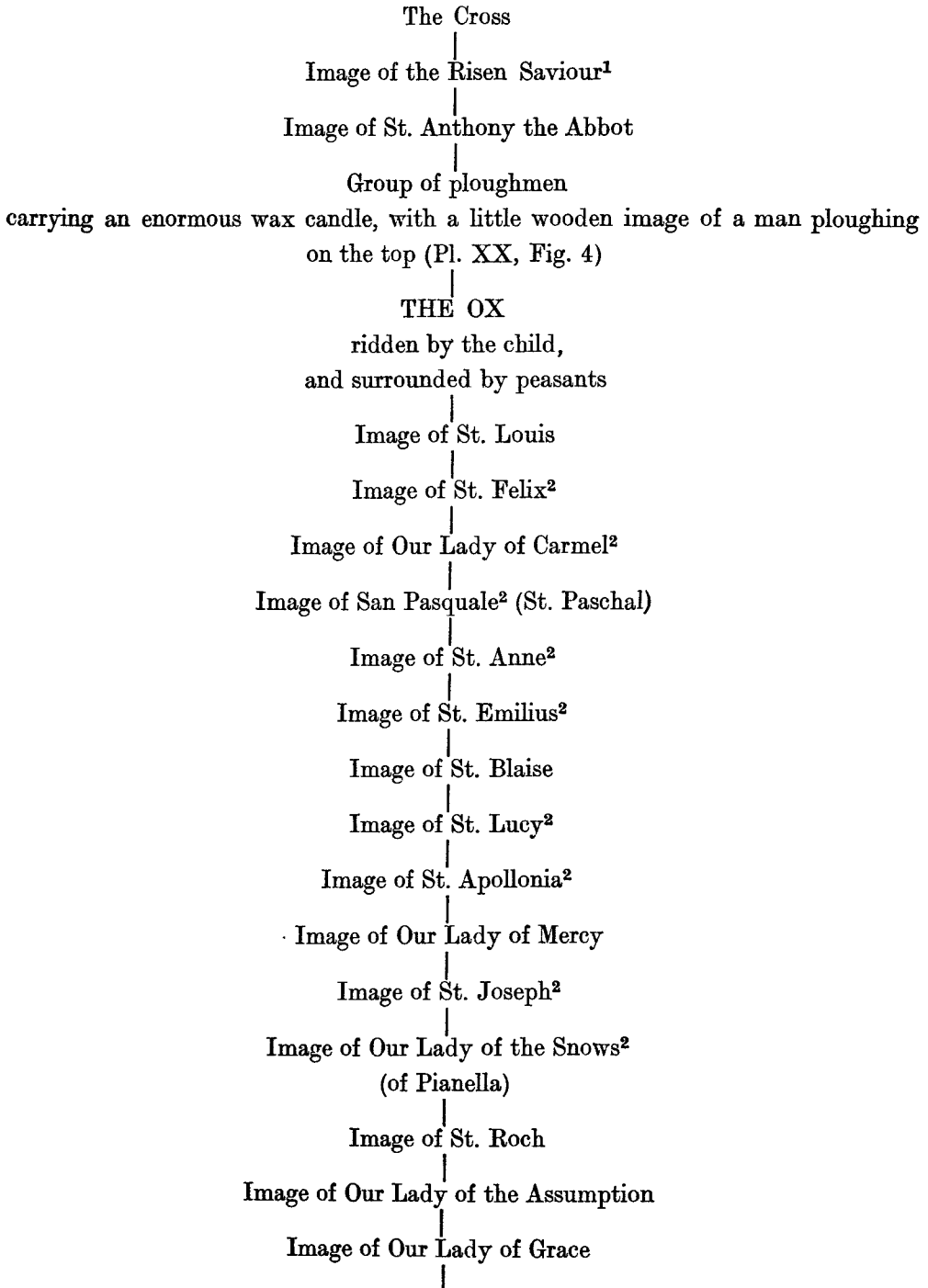
Entering the village by the Largo Garibaldi, the open space at the foot of the hill on which Loreto castle stands (and on which the postal motors stop and the bands play in the evening on festal occasions), the procession winds its way up the narrow and tortuous streets till it reaches the castle hill by the Via di Bòrea (or North Street).

The procession breaks up on reaching the church, after receiving the divine blessing from the Abbot on the church steps.

At 11.30 the ox, preceded and followed by the images of saints from neighbouring churches, entered the village by the castle gate. It then proceeded up the Via del Bajo to the church, which it entered and knelt once before the image of St. Zopito that was standing before the high altar. It left the church by the same door—the principal door—by which it had entered, and was led into the arched passage-way of a neighbouring house, where the "Angiolétto" dismounted, and he and the ox waited, while the procession was being formed up in the street outside by the "Priori" or repre-

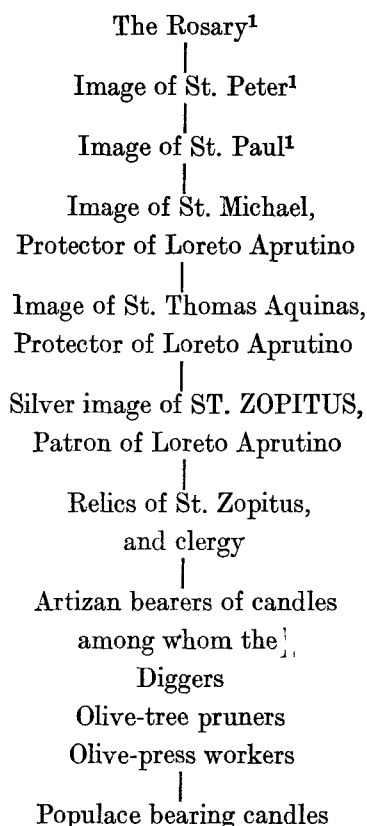
¹ The hours given are Italian legal summer time throughout, one hour later than Italian mean time and one hour and ten minutes later than Central Europe time.

sentatives of the St. Zopito Festival Committee. The order of the procession was as follows :—



¹ Each image was carried by four men.

² These images were not carried in the 1920 procession.



“After all the ancient and modern images from the churches of the town and country, after the ox, after the image of the Protector and his predecessors, after the bands and religious fraternities, come the brides that have been married during the year, now no longer covered with ornamental silk handkerchiefs, but still resplendent in showy necklaces, beads, and gold ear-rings, and nearly all (is it by the grace of the Saint?) in the condition of prospective mothers”² (Pl. XXI, Fig. 1).

As soon as the non-ecclesiastical part of the procession is in place, the images are brought out from the church; as soon as the Cross, the Risen Saviour, and St. Anthony the Abbot have passed, the ox is led out of the archway where it has been waiting to take its place in the procession. As the images reach their appointed stations, the procession moves off. The band of Pianella accompanies it, following immediately after the clergy carrying the relics of the Saint. The procession, moving faster than what one would usually suppose a specially fattened ox to move, goes along the Via del Bajo, down the castle hill and out by the castle gate.

¹ These images were not carried in the 1920 procession.

² Dr. Acerbo, *op. cit.*

The village of Loreto Aprutino being built on the side and top of a hill, its ground plan is somewhat peculiar. The Via del Bajo runs along the top of the summit ridge of the hill, from the castle at one end to the Abbey Church of St. Peter at the other, while more or less parallel to this and to each other run a number of narrow alleys, some practically on a level, some sloping slightly from one end of the village to the other; these are connected by very narrow and steep passages, usually stepped and often passing underneath archways.

This special configuration enables the procession to make a very long *détour* through the village, going backwards and forwards S-wise along the slightly sloping streets, with an occasional sharp rise or descent at either end. When the procession reaches the square, Piazza Venti Settembre, at the bottom of the village, it turns and doubles back again, passing through all the streets in turn, until it reaches the castle hill again by the Via di Borea, and so to the Abbey.

Here the ox again enters the church, and is made to kneel in the middle of the aisle facing the High Altar. In the meantime the images arrive and are carried past the animal, up to their places on the altar-steps. The church is densely crowded, the ox is surrounded by a closely packed mass of humanity all anxious to get a glimpse of the beast when it kneels.

The animal is now led slowly forward, and at a short distance from the image of St. Zopitus is made to kneel again. Those of the congregation that are crowded in the space between the ox and the altar-steps, turn their backs to the High Altar and kneel, facing the ox as it kneels also. The whole crowd then surges along with the slow-moving ox towards the chapel of St. Thomas Aquinas, where the animal again kneels. The performance is repeated at the chapel of St. Michael on the opposite side of the church, after which the ox, still of course bearing its little rider clothed in white on its back, leaves the church by the side-door.

The ecclesiastical part of the ceremony is now over as far as the ox is concerned. That animal is led to the house of Baron Casamarte, mounts the steps at his entrance-door and halts in the archway leading to the courtyard. The child rider is now lifted off (Pl. XXI, Fig. 2), and while he is being admired and petted by the Baroness, the Baroness's little daughter is placed on the ox's back and held there while the ox is made to kneel. The Baron and his lady look on approvingly, and the "*Angiolétto*" and all the peasants who have formed the immediate entourage of the ox, including the piper, now retire to the Baron's kitchen, where a large cake is partaken of, washed down with the excellent wine from the Baron's vast estates roundabout.

The party then lead the ox home, still to the shrill lament of the bagpipes.

And now the ox must return to his plough until the approach of next Whitsuntide may perchance again free him from the yoke for a season.

IV.—PROBABLE ORIGINS OF THE FESTIVAL.

It is a notable fact that one of the most important decisions of Pope Clement XI was that by which the Jesuit missionaries were forbidden to take a part in idolatrous worship, and to accommodate Christian language to pagan ideas under plea of conciliating the heathen. The early part of the eighteenth century was a time when orthodox doctrine, supported by the papal bull of 1713 (*Unigenitus Dei Filius*), was fighting a hard battle against heresy, both Jansenist and Gallican; and it was not, therefore, a time to overlook the accommodating of Christian language to pagan ideas in any form. Far less was it a time to allow the continuance of a pagan festival in the very state bordering on the Marches of the Holy See—for Loreto Aprutino, with all the Abruzzi, was then a part of the kingdom of Naples.

On the other hand, while it is easy to forbid a hermit missionary from taking part in a heathen ceremony in India or Africa, it is not equally easy to prevent a mass of fanatical Abruzzese peasantry from performing the acts of public worship in the manner to which they are accustomed. This was admirably exemplified in 1876, when the then Bishop of Penne attempted to put a stop to the entry of the ox into the church. He ordered, and the Abbot of Loreto, Don Clementino da Fermo, informed his flock that the ox should not enter the church that Whitsuntide.

If the Loretani had been told that their village was to be burnt to the ground and their fields laid waste, the effect of such a declaration could not have been more electrical. Like a lot of angry bees they crowded to the Abbey Church threatening Don Clementino with violence and compelling him to take refuge in his house, where he was kept virtually a prisoner by the mob for over a week, notwithstanding the arrival of two companies of “bersaglieri” from Pescara. And the ox entered into the temple and the congregation knelt before it as they had always done.

Dr. Acerbo, in his article already quoted,¹ remarks that the fact of the participation of an ox in a Christian festival occurring only at Loreto, and in none other of the neighbouring villages from Penne to the sea, does away with the supposition of the survival of a pre-Mediæval rite. We can hardly agree with him, for the same argument might be applied to the Feast of Serpents at Cocullo and to the Corn-festivals at Bugnara and Bisenti, two villages in totally different regions of the Abruzzi, over thirty-five miles apart, and separated from one another by the whole main range of the Apennines.

That the festival is a fertility ceremony of a well-established type there can be no doubt.

The corn-spirit is personified in the ox with almost exactly the same ceremonial in use in China on several occasions: thus at the feast of the Chinese New Year “a large effigy of an ox, cow, or buffalo has been prepared for the occasion, and

¹ See p. 308.

stands outside the east gate with agricultural implements beside it"—here we have an analogy with the diminutive plough carried by the various groups of agricultural workers in the procession of St. Zopito.¹ In another province of China a large image of a cow is borne in procession; "behind this monstrous cow walks a boy with one foot shod and the other bare, personifying the Genius of Industry."² Here we have the "Angiolétto" of Loreto.

Near Wei-hai-wei the ceremony of the "Beginning of Spring" is a movable feast, which falls usually in the first moon. A great pasteboard effigy of an ox is carried in the procession.³

The Festival of Loreto Aprutino is also a movable feast, since it takes place on Whit-Monday. But it is by no means necessary to go as far afield as China to find festivals that remind one forcibly of the procession of St. Zopito. The Bouphonia at Athens and the sacrifice to Zeus Sosipolis at Magnesia are instances of such ceremonies in classical times.⁴

Indeed, between the latter festival and that of St. Zopito at Loreto Aprutino there are certain special analogies that are perhaps worthy of consideration.

We are told that at the *παγήρυρις* in Magnesia the Hierokeryx and the rest of the officials pronounced a prayer on behalf of "the safety of the city, and the land, and the citizens, and the women and children, for peace and wealth, and for the bringing forth of grain and of all the other fruits, and of cattle."⁵ At the Mass that takes place in the Abbey Church of Loreto Aprutino on the Whit-Monday morning, before the procession of the ox, the special hymn "Laureti felix incola" is sung, the third and last verse of which runs as follows:—

" In hoc cedunt dissidia
Ab hoc pelluntur fulmina
grando liquescit turbines
disperdit hic et nebulas ";

and the prayer is offered to St. Zopito: "Deh! colla valevole vostra protezione difendeteci e liberateci dalle procelle e tempeste, dai fulmini e tremmoti (*sic* !), dalle guerre carestie e dalla peste, come pure da qualunque altro male fisico e morale."⁶

It is also practically certain that the year-bull of Magnesia knelt down as a part of the ceremonial like the bull sacrificed to Zeus Polieus at Kos.⁷

¹ J. G. Frazer, *Spirits of the Corn and of the Wild*, vol. ii, p. 10.

² Frazer, *op. cit.*, p. 2.

³ Frazer, *loc. cit.*

⁴ These ceremonies are described briefly by Frazer, *Spirits of the Corn and of the Wild*, vol. ii, p. 4 and 7, and also discussed at greater length by J. E. Harrison in *Themis*, p. 142 sq.

⁵ J. E. Harrison, *op. cit.*, p. 151.

⁶ From the *Novena in onore del glorioso Martire e protettore di Loreto, San Zopito*, printed in pamphlet form (no place or date) a copy of which is preserved in the library founded by Baron Antonio Casamarte, now in the Casamarte Palace at Loreto.

⁷ J. E. Harrison. *loc. cit.*

St. Zopito, patron saint and Protector of Loreto Aprutino, is still honoured in the same way as was Zeus Sosipolis, Protector of Athens and Zeus Polieus, the city god of Magnesia. We are indeed "back with the Kouretes at Palaikastro, before the altar of Diktæan Zeus."¹

May we see in the stalwart young peasants who march alongside the ox a band of Kouretes; and in the "Angiolétto" a veritable Kouros? Like the Feast at Magnesia, so also that of Loreto is a movable festival; like it, the time is fixed in relation to the sowing of the crops, for Whitsuntide is in the Abruzzi "the season when the last sowings (maize and french beans) have been placed in the earth, and when the earliest harvests (hay and forage) are just begun or about to take place."²

The supposed origin of Loreto itself gives us a hint at the probable channel by means of which such a very ancient type of festival may have been handed down from pre-historic times to our own twentieth century. Near the site of the present Fiorano, hardly more than a mile from Loreto, where there exists a church dedicated to the Madonna delle Grazie, ancient ruins have been from time to time discovered, that apparently belonged to a town or village of Republican Roman times (when Sulla laid siege to Penne) called *Floræ Fanum*, the Holy Place of *Flora*. This burg is said to have been destroyed in a barbarian invasion, when the inhabitants fled to the top of the hill on which Loreto now stands, and there established themselves.³

May not these ancient worshippers of *Flora*, the goddess who still lives on the site of her old temple with the new name of Our Lady of Grace, have kept alive the ritual of their tutelary deity?

"*Flora*" was worshipped by the Sabines long before the foundation of Rome,⁴ it may be with rites that had descended to her from pre-Olympian times, and in which the goddess occupied a very secondary position.

From the Roman priests incorporating the ox and the child and all the rest of it into the orthodox Festival of the *Floralia* to the Diocesan Chapter of Penne receiving them into the specially established Festival of St. Zopito, is but a step.

The official church account of the finding of the relics of the Saint himself in 1710 is highly unsatisfactory in many ways. First of all, it is somewhat strange to find that the very name of this fertility-saint is Zopito, which is none other than the modern Greek pronunciation of *ζῳφύτος* that means, according to Messrs. Liddell & Scott, "giving life to plants, fertilizing, generative."

Æschylus uses the words *ζῳφύτον αἶμα* almost as a balance to *ἀλφεσίβοιον ὕδωρ*,⁵ and though the literal translation of the passage may be uncertain,

¹ J. E. Harrison, *loc. cit.*

² Dr. Acerbo, *op. cit.*

³ E. Abbate, *op. cit.*, part II, pp. 459-61.

⁴ See Varro, *De Re Rustica*, etc.

⁵ Supp. L., 857.

the general meaning is hardly doubtful. Plutarch applies it as a qualificative adjective of Earth.¹ It sounds more like a qualification of some ancient deity than the name of a saint. The lack of any record as to the Saint's life and martyrdom, though explained by the fact that we do not possess the Acts of all the Martyrs,² is also unsatisfactory.

As to the events stated to have occurred in 1710–11, the only contemporary document whose existence I was able to discover is an agreement, written on vellum and dated May 23rd, 1711, between the Canons of the Diocesan Chapter of Penne and the Università Municipale of Loreto regarding the deposit of the body and blood of St. Zopito. The original of this document is stated to be at Penne, in the Chapter Archives; an authenticated copy is in the Sacristy of the Church of Saint Peter at Loreto Aprutino.

The entry regarding St. Zopito in the Martyrologium preserved in the Sacristy of St. Peter's is made in manuscript and dated June 23rd, 1788. It refers briefly to the establishment of both festivals of the Saint, that in October ("IV Ides Octobris"), and that on Whit-Monday ("die secunda Pentecosten"). No reasons for the establishment of these feasts are given, beyond those already mentioned in the official church account, and no mention is made of the ox.

If the citizens of Loreto Aprutino did not in the eighteenth and nineteenth centuries actually leap and dance in honour of their Heavenly Protector, they came fairly close to it—they performed dramas in his honour! In the library of Baron Casamarte there are copies of "Drammi da cantarsi in Loreto ricorrendo la festività di S. Zopito." These are "Il merito glorioso," performed on June 5th, 1786, "La Bersabea," on June 1st, 1789, and "La Casta Susanna," on the day following; and "Il trionfo di Giuditta" on June 1st, 1819.

I was informed that similar "sacred dramas" were "sung" in other years also, but these are the only ones of which I actually saw the "libretto."

A special hymn to St. Zopitus the Martyr was first sung in Penne on the evening of October 11th, 1847, and repeated at Loreto on June 13th, 1848.

V.—BELIEF IN THE INFLUENCE OF THE OX'S EXCRETA ON THE CROPS.

The fact that the ox usually evacuates during the ceremony, and that the natives consider the quantity of excrement to be an indication of the measure of the forth-

¹ Rom. 20.

² The Church only possesses separate records of the Acts of those Martyrs who perished by some specific act of violence, such as burning at the stake or death by the sword; in the case of those Martyrs who perished in prison from the hardships they were there compelled to undergo, no special record was kept.

See also P. Ruinat, *Atti sinceri de' primi martiri della Chiesa Cattolica raccolti e tradotti nella lingua italiana con prenotazioni e note*—da Francesco Maria Luchini—In Roma MDCCLXXVII—nella stamperia di S. Michele a Ripa presso Paolo Giunchi. *Provisore di Libri della Biblioteca Vaticana*, p. 207.



FIG. 2.—THE OX, WITH ITS RIDER, PRECEDED BY THE PIPER.



FIG. 4.—OX ASCENDING A SIDE STREET, PRECEDED BY THE PLOUGHMAN'S EMBLEM



FIG. 1.—LORETO APRUTINO FROM THE WEST.



FIG. 3.—OX AND RIDER, PRECEDED BY PIPER, ASCENDING CASTLE HILL. (NOTE THE RIDER'S PARASOL.)



FIG. 1.—WOMEN IN THE PROCESSION IN PIAZZA SAN BIAGIO.



FIG. 2.—THE OX IN THE COURTYARD OF PALAZZO CASAMARTE.

THE FESTIVAL OF SAN ZOPITO AND THE OX AT LORETO APRUTINO.

coming harvest, is reported by De Nino, D'Annunzio and Abbate in the works already quoted.

It is incorrect to state that the ox always evacuates in the church or while kneeling before the Saint, though since we are dealing with a live animal recently subjected to a special process of hypernutrition, it is not to be wondered at that such an event should have occurred at some time or other.

Though denied by Abate di Vestea, it appears to be true that the peasantry do attach a definite significance to the excreta deposited by the ox during the festival, though it is not clear whether the act of evacuation should take place actually in the church. In the ceremony I witnessed the event occurred in the middle of the Via del Bajo, just opposite the Casamarte palace, and the abundance of the faecal matter gave rise to much joyful comment amongst the peasantry. When the act was taking place the peasant who "offered" the ox was standing by and making vigorous gestures as though to encourage the animal to evacuate yet more.

I was informed by an old retainer of the Baron's that the ox is not allowed to pollute the actual floor of the church, as a group of peasants who follow close behind the animal with large handkerchiefs, etc., are ready to interpose these between the ox and the floor should occasion arise. The same servant informed me after the event, that great glee would doubtless prevail in the district at the good prospects for this year's harvest, indicated by the large quantity of excreta deposited. He himself appeared overjoyed at the occurrence, though somewhat shy of discussing the subject with a "signore forestiero."

In conclusion, I may perhaps be allowed to state my conviction that further particulars of interest concerning this ceremony might probably be elicited by a person of tact who was thoroughly proficient in the somewhat difficult local dialect, and had lived some considerable time in the region. The educated inhabitants are obviously almost as ashamed of their ox and his extraordinary ceremonial as are the ecclesiastical authorities, and are chary of telling a stranger anything that they think might redound to the discredit of their little town.

I cannot bring this note to a close without expressing my deepest indebtedness to Baron Nino Casamarte and his charming consort for their lavish hospitality and the interest they were so kind as to show in my researches, by placing their rich library at my disposal, as well as in a hundred other ways. My gratitude is also due to Capt. Vecchi ("Jack la Bolina"), Commendatore Cesare De Laurentiis, and other kind friends and acquaintances in Florence, without whose generous help I could not have seen this ceremony under such advantageous circumstances as it was my privilege to do.

Florence, 1920.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1922.

January 24th, 1922.

Annual General Meeting. (See p. 1.)

January 10th, 1922.

Special Meeting at 50, Great Russell Street.

Mr. H. J. E. PEAKE in the Chair.

The meeting being a special one, there was no business to transact.

Mr. J. WHATMOUGH read his paper on "Rehtia, the Venetic Goddess of Healing," illustrated by lantern slides.

The paper was discussed by Mr. PEAKE and Mr. GARFITT.

A hearty vote of thanks was accorded to Mr. WHATMOUGH, and the Institute adjourned till January 17th.

January 17th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. RIVERS, President, in the Chair.

The minutes of the last meeting were read and accepted.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. E. E. Codrington, Major W. F. Dick, Mr. G. B. W. Smith-Rewse, Mr. G. A. Taylor and Dr. F. J. Wethered.

Dr. H. S. STANNUS exhibited a number of ethnographical specimens from Nyassaland, and lantern slides descriptive of the tribes near Lake Nyassa.

Questions were asked by Dr. RUSHTON PARKER, Mr. PARKYN, Rev. ROBERTSON, Mr. MOGGRIDGE, Mr. PEAKE, Professor PARSONS, Miss MURRAY and the PRESIDENT, to which Dr. STANNUS replied.

The hearty thanks of the Institute were accorded to Dr. STANNUS for his most interesting demonstration, and the Institute adjourned till February 14th.

February 14th, 1922.

Ordinary Meeting at the Royal Society, Burlington House, Piccadilly.

Dr. RIVERS, President, in the Chair.

The minutes of the last meeting were read and accepted.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. A. Leslie Armstrong, Mr. Laurence Chauvin, Mr. Leslie Davies Shiel, Mr. Robert Kerr, Major Owen Rutter, Mr. Edwin Ward, Professor David Waterston, Mr. Cecil White.

Professor ELLIOT SMITH gave his paper on "The Brain of Rhodesian Man," illustrated by lantern slides and diagrams.

The paper was discussed by the PRESIDENT, Dr. SMITH WOODWARD, Professor WRIGHT and Professor PARSONS, and Professor ELLIOT SMITH replied.

A hearty vote of thanks was accorded to Professor ELLIOT SMITH for his valuable paper, and the Institute adjourned till February 28th.

February 28th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. W. H. R. RIVERS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Miss Elizabeth Harper and Miss Agnes Dawson.

Miss R. M. FLEMING read her paper on "Sex and Growth Features in Racial Analysis."

The paper was discussed by the PRESIDENT, Professor PARSONS, Dr. MACINKTOSH, Mrs. AITKEN and Professor FLEURE, and Miss FLEMING replied.

A hearty vote of thanks was accorded to Miss FLEMING for her valuable and interesting paper, and the Institute adjourned till March 14th.

March 14th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. W. H. R. RIVERS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Mr. J. P. MILLS, I.C.S., read his paper on the "Lhota Nagas," illustrated by lantern slides.

The paper was discussed by the PRESIDENT, Col. SHAKESPEAR, Mr. BRAUNHOLTZ, Mr. PARKYN, Mr. RAY, Mr. HAZZLEDINE WARREN and Dr. RUSHTON PARKER, and Mr. MILLS replied.

A hearty vote of thanks was accorded to Mr. MILLS for his interesting paper, and the Institute adjourned till March 28th.

March 28th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. HADDON, Past President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Miss Alice Chance, Capt. Douglas Hamilton Gordon, Mr. G. Beresford Stooke, Mr. G. T. M. McBryant.

Mr. H. J. E. PEAKE read his paper on "Bronze Swords and the Aryan Problem," illustrated by drawings and diagrams.

The paper was discussed by Dr. HADDON, Mr. E. C. R. ARMSTRONG, Mr. PARKER BREWIS and Mr. PARKYN, and Mr. PEAKE was asked to deal with the ethnological aspect of the subject.

A very hearty vote of thanks was accorded to Mr. PEAKE for his valuable and interesting paper, and the Institute adjourned till April 11th.

April 11th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. W. H. R. RIVERS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as an Ordinary Fellow of the Institute was announced: Mr. Frederick Deacon.

Miss BRETON gave her paper on "Notes on Some Peruvian Antiquities," with exhibits and lantern slides.

Capt. JOYCE read his paper on "The Paquecha of Ancient Peru," illustrated by exhibits and lantern slides.

The papers were discussed by the PRESIDENT, Mr. MEANS, Mr. HEYE, Mr. CLARKE and Dr. RUSHTON PARKER, and Miss BRETON and Capt. JOYCE replied.

A hearty vote of thanks was given to Miss BRETON and Capt. JOYCE, and the Institute adjourned till May 9th.

May 9th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. W. H. R. RIVERS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as an Ordinary Fellow of the Institute was announced: Mr. Ernest H. N. Skrimshire.

Capt. M. W. HILTON-SIMPSON read his paper on "Some Ethnographical Researches among the Berbers of Algeria," illustrated by lantern slides.

The paper was discussed by the PRESIDENT and Mr. PEAKE.

A hearty vote of thanks was accorded to Capt. HILTON-SIMPSON, and the Institute adjourned till May 23rd.

May 23rd, 1922.

Ordinary Meeting at 50, Great Russell Street.

Dr. W. H. R. RIVERS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Dr. MALINOWSKI read his paper on "The Theory and Practice of Witchcraft in Western New Guinea."

The paper was discussed by the PRESIDENT, Professor SELIGMAN, Dr. HADDON, Dr. RUSHTON PARKER, Miss DURHAM, Mr. PARKYN, Miss MURRAY and Sir JAMES FRAZER, and Dr. MALINOWSKI replied.

A hearty vote of thanks was accorded to Dr. MALINOWSKI for his interesting and valuable paper, and the Institute adjourned till June 13th.¹

June 27th, 1922.

Ordinary Meeting held at 50, Great Russell Street.

Mr. H. J. E. PEAKE in the Chair.

The minutes of the last meeting were read and accepted.

Mr. PEAKE alluded to the untimely death of Dr. W. H. R. RIVERS, President of the Institute, as an irreparable loss sustained by the Institute and the Science of Anthropology.

The election of the following as Ordinary Fellows of the Institute was announced: Miss D. H. de Beer, Mr. John T. Bevan, Mrs. Irene Blackman, Mrs. A. M. Gentley, Dr. Edith M. Guest, Mr. Herbert Livesey, Mr. D. S. Reddi, Mr. Stanley Roberts, Mr. C. F. Roed, Rev. A. G. Simpson, Miss Frances C. Skurray, Mr. E. Geoffrey Toye.

Professor ALLEN MAWER read his paper on "The Study of English Place Names."

The paper was discussed by Mr. PEAKE, Dr. SINGER, Dr. SMURTHWAITE, Mr. NIXON and Dr. RUSHTON PARKER, and Professor MAWER replied.

A hearty vote of thanks was accorded to Professor MAWER for his interesting and valuable lecture, and the Institute adjourned till the Autumn.

November 7th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Professor F. G. PARSONS, Vice-President, in the Chair.

The minutes of the last meeting were read and accepted.

Professor SOLLAS read a paper by Dr. R. Broom, entitled "A Contribution to the Craniology of the Yellow-skinned Races of South Africa."

The paper was discussed by Dr. SHRUBSALL and Professor PARSONS, and Professor SOLLAS replied.

The hearty thanks of the meeting were accorded to Professor SOLLAS for his kindness in reading the paper.

The Institute adjourned till November 21st.

November 21st, 1922.

Ordinary Meeting held at 50, Great Russell Street.

Professor F. G. PARSONS, Vice-President, in the Chair.

¹Owing to the sudden death of the President, the Meeting on June 13th did not take place.

The minutes of the last meeting were read and accepted.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. A. L. Blyth, Mr. O. G. S. Crawford, Capt. V. H. Fergusson, Miss D. A. G. Garrod, Mr. T. B. Johnston, Mr. G. F. Maine, Mr. S. Pilling, Capt. G. H. Pitt-Rivers, Dr. R. B. Seager, Mr. T. Sheppard, Rev. Theo Sorensen, Miss G. Caton-Thompson and Miss M. Wilman.

Miss M. A. MURRAY read her paper on "The Recent Excavations in Malta," illustrated by lantern slides.

The paper was discussed by Professor PARSONS, Miss CATON-THOMPSON, Professor MYRES, Mr. PEAKE and Mr. BURKITT, and Miss MURRAY replied.

A hearty vote of thanks was accorded to Miss MURRAY, and the Institute adjourned till December 5th.

December 5th, 1922.

Ordinary Meeting held at 50, Great Russell Street.

Sir C. HERCULES READ, Past President, in the Chair.

The minutes of the last meeting were read and accepted.

Miss E. KEMP read her paper on "The Aborigines of Western China," illustrated by lantern slides and specimens.

The paper was discussed by Sir HERCULES READ, Dr. RUSHTON PARKER, Mr. PEAKE, Mr. RAY, Dr. MACKINTOSH, Miss DURHAM and Mr. LOUIS CLARKE.

The hearty thanks of the meeting were accorded to Miss KEMP and the Institute adjourned till December 19th.

December 19th, 1922.

Ordinary Meeting at 50, Great Russell Street.

Professor J. L. MYRES, Vice-President, in the Chair.

The minutes of the last meeting were read and accepted.

The election of the following as Ordinary Fellows of the Institute was announced: Dr. E. J. Boome, Mr. Parker Brewis, Mr. G. E. Brunwin, Mrs. M. B. Daniell, Rev. W. H. Edgell, Mr. G. P. Lestrade and Rev. A. Stewart Woodhouse.

Dr. CYRIL FOX read his paper on "The Distribution of Population in the Cambridge Region in Early Times, with special reference to the Bronze Age," illustrated by lantern slides.

The paper was discussed by Mr. PEAKE and Professor MYRES, and Dr. FOX replied.

The hearty thanks of the meeting were accorded to Dr. FOX for his valuable and interesting paper, and the Institute adjourned till January 16th, 1923.

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